Owner's Manual

COMPACT DISC JUKEBOX

CJ-V77
CJ-V99

LASER JUKE

COMPACT disc DIGITAL AUDIO

ORDER No.
ARP2364

Thank you for buying this PIONEER product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the owner's manual, put them away in a safe place for future reference.

IMPORTANT NOTICE
RECORD THE MODEL NUMBER AND SERIAL NUMBER OF THIS EQUIPMENT BELOW. THE NUMBERS ARE ON THE REAR PANEL.

MODEL NO. CJ-V99/CJ-V77

SERIAL NO. _____

KEEP THESE NUMBERS FOR FUTURE USE.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

[For Canadian models]
CAUTION:
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION:
POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

WARNING: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Only peripherals (Computer input/output device, Terminals, Printers, etc) or computers certified to comply with the class B limits may be attached to this equipment.
Operation with non-certified peripherals or computers in likely to result in interference to radio and TV reception.

CAUTION: Be sure to use the shielded cables when connect this equipment to other devices.

FCC ID : AJDTO25

CERTIFIED TO COMPLY WITH THE LIMITS FOR A CLASS B COMPUTING DEVICE PURSUANT TO SUBPART J OF PART 15 OF FCC RULES.
SEE INSTRUCTIONS IF INTERFERENCE TO RADIO RECEPTION IS SUSPECTED.

PIONEER®
The Art of Entertainment

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.
RETAIN INSTRUCTIONS – The operating instructions should be retained for future reference.
HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.
WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
LOCATION – The appliance should be installed in a stable location.
WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.
VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized-alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.
NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged.
- Objects have fallen, or liquid has been spilled into the appliance.
- The appliance has been exposed to rain.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.
CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

NEC – NATIONAL ELECTRIC CODE

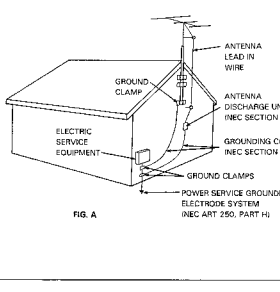
ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810 – 20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810 – 21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

FIG. A

CAUTION

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Use of optical instruments with this product will increase eye hazards.

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decibel Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.
THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE	
90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

[For Canadian model]
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

[Pour le modèle Canadien]
L'interférence, radioélectrique générée par cet appareil numérique de type B ne dépasse les limites énoncées dans le Règlement sur les perturbations radioélectriques, section appareil numérique, du Ministère des Communications.

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POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

CAUTIONS ON INSTALLATION

Select a horizontal and stable place. Avoid the following:

①Expose to direct sunlight
②Installation near a toilet or kitchen
③Expose to a spotlight
④Installation near a refrigerator, dimmer, air-conditioning equipment or other large electrical appliances
⑤Installation near neon signs
⑥Installation on a non-horizontal place with a weak floor
Where the floor is not horizontal, insert a hard plate or something similar beneath the casters.
⑦Installation in a place where it is difficult to carry out coin/bill collection, servicing or maintenance.

Condensation

In winter, if this system is brought from outdoors into a heated room or the temperature of the room where this system is installed is raised quickly, the operation unit or lens will be covered by condensation.
When covered by condensation, this system cannot read and play laser beam signals.
Keep this system at room temperature for one to two hours depending on the degree of condensation and the condensation will evaporate, making this system ready for playing.
Other symptoms similar to condensation may also occur at places exposed directly to a cooler or air-conditioner in summer. In such a case, move this system to another location.

Special cautions on setting

①**Power capacity**
Supply power from a wall outlet that allows a safe supply of power equal to or more than the total power consumption of all equipment you will use.
②**Connection cord**
Prevent the weight or tensile force of the cord from being applied to the plug of the connection cord.
③**Grounding**
Where no earth leakage breaker is available, connect the grounding conductor to the earth.
④**Confirmation after setting**
Be sure to confirm the following:
- Casters are locked.
- The menu sheet matches the discs.
- The external speaker phase is properly set and the right and left speakers are positioned properly.

Our company will not be responsible for any accident or other damage due to an improper fixing condition, fixing with insufficient strength, accident, or other similar circumstances.

CARE OF DISCS

- With this unit, use discs which display the mark shown below.

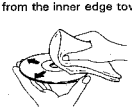
COMPACT disc DIGITAL AUDIO

- When holding discs, do not touch their signal surfaces. Hold the edges, or one edge and the center hole.

- Do not affix labels or adhesive tape to the label surfaces. Also, do not scratch or damage the label.
- Discs rotate at high speed inside the player. Do not use damaged (cracked or warped) discs.

CLEANING DISCS

- The presence of fingerprints or smudge on the surface of the disc will not directly affect the recorded signals; but depending on the degree of contamination, the brightness of the light reflected from the signal surfaces may be reduced, causing degradation of sound quality. Always keep your discs clean by wiping them gently with a soft cloth from the inner edge toward the outer perimeter.



- If a disc becomes very dirty, wet a soft cloth in water. After wringing it out well, wipe the dirt away gently, and then remove any water drops with another soft dry cloth.
- Do not use record cleaning sprays of anti-static agents on discs. Also, never clean discs with benzene, thinner, or other volatile solvents which may cause damage to the disc surface.

STORING DISCS

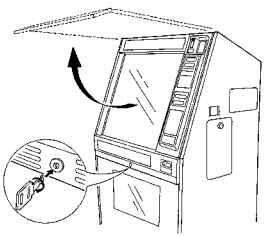
(Storing without using the six-disc magazine)

- Discs are made of the same kinds of plastic used for conventional analog audio records. Be careful not to allow discs to warp; always store discs in their cases vertically, avoiding locations with heat or humidity, or extremely low temperatures. Avoid leaving discs in cars and on the seats being exposed to direct sunlight. This can be harmful to your discs.
- Always read and abide by the precautionary notes listed on the disc labels.

HOW TO OPEN THE MENU DOOR

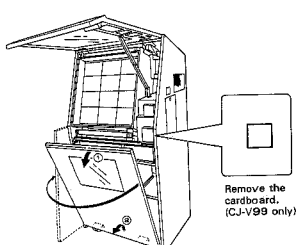
①Remove the menu door key attached to the glass menu board.
②Insert the key in the keyhole and turn to the right. Open the menu door.
③Hold the menu door up and make sure that it is fastened to the arm.

NOTE:
The keys on the glass menu board are for opening the charge storage cover to install the coins/bills box. See "INSTALLING THE COIN BOX" on page 22.



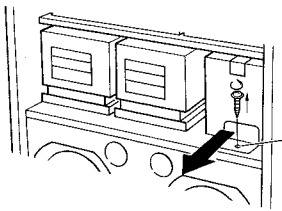
HOW TO OPEN THE MAIN UNIT DOOR

- The upper part of the main unit door is held to the main unit with a magnet. To open it, pull the upper part towards you.
- A string is attached as stopper on the left side.
- To remove the MAIN UNIT DOOR for connection etc., hold the door up, and pull the two projections located on the bottom of the door out of the slit.
- Remove the connector and set the projections so that the door will not fall down.



Remove the cardboard. (CJ-V99 only)

ACCESSORIES



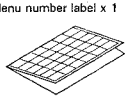
When opening the MAIN UNIT DOOR, you can see the accessory box in the CD changer. Remove the screw using a Phillips-head screwdriver, then remove the accessory box. Other accessories are stored in the illumination cover inside the MAIN UNIT DOOR.

Remove them also.

Accessories in the accessory box

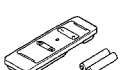
Indication plate x 1 each

Menu number label x 1

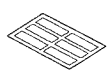


Stopper for the coin acceptance inlet x 2

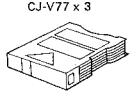
Remote control unit x 1
Dry cell battery
(size "AAA" IEC R03) x 2



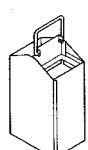
Coin sheet x 1
(CJ-V77 only)



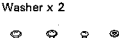
Magazine:
CJ-V99 x 6,
CJ-V77 x 3



Coin box x 1



CJ-V77 only:
Screw A (M4 x 8) x 6,
Screw B (M3 x 6) x 1
Wood screw x 2,
Washer x 2



B A

Accessories in packing case.

Follow-up card x 1

Other accessories

Front door keys x 2

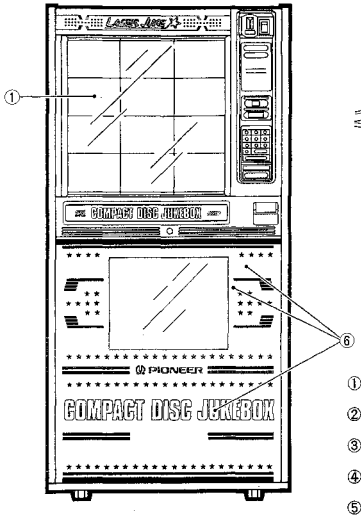
Charge storage cover keys x 3

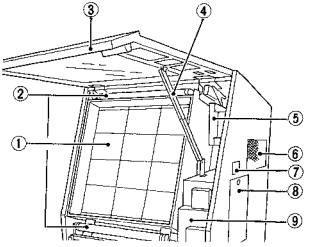
Accessories attached to the menu glass.

Operating instructions x 1

Owner's manual x 1

NAME AND FUNCTION OF EACH PART





① **Menu board**

② **Fluorescent lamp for menu illumination**

③ **Menu door**

④ **Arm**

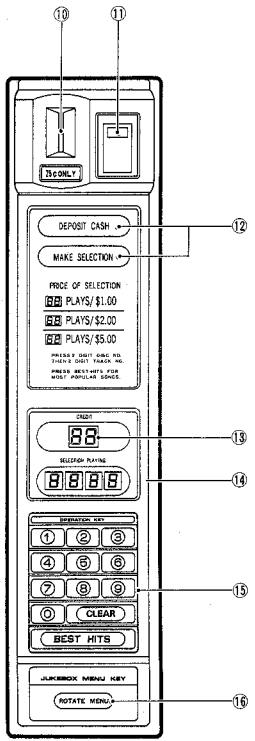
⑤ **Coin acceptor**

⑥ **Speakers**

⑦ **Coin-return hole**
When a coin is inserted while the indication "DEPOSIT CASH" is off or unacceptable kinds of coins are inserted, they are returned via this hole.

⑧ **CHARGE STORAGE COVER**

⑨ **Bill holder**



(OPERATION PANEL SECTION)

⑩ Coin insertion hole

CAUTION:
Inserted coins will not be returned even though the coin-return lever is operated. Insert only the amount of coins needed.

⑪ Coin-return lever

Operate the coin-return lever when a deformed or steel imitation coin is caught. This will cause the coin to return via the coin-return hole.

⑫ Operation guide display

- **DEPOSIT CASH.**
  When this indication is lit, you can insert cash.
- **MAKE SELECTION.**
  This indication is lit when the system is ready for music selection.

⑬ CREDIT indicator

This indication shows the number of music titles you can select using the inserted cash.
"FP" is displayed during free play.

⑭ SELECTION PLAYING indicator

This indication shows the selection number by using numeric keys.
When no key input is being done, this indication shows the number of the music title currently being played.
"OPEN" is displayed while the menu door is open.

⑮ OPERATION key

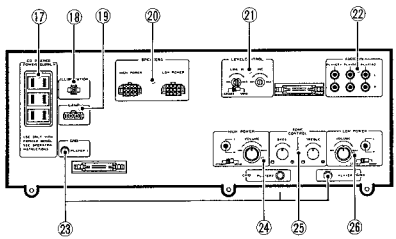
- **Numeric keys**
  Use these keys to enter the disc number and track number to be played.
- **CLEAR key**
  The selection can be canceled by pressing the CLEAR key while the digits are flushing after entering the last digit.
- **BEST HITS key**
  The most-popular piece of music on the location is automatically selected.

⑯ ROTATE MENU key

To rotate the menu board.
A maximum of 3 menu boards can be displayed.

(INSIDE OF THE MAIN UNIT DOOR)

■ Amplifier section



* Cords are connected to ⑱, ⑲ and ⑳ at shipping.

⑰ CD PLAYER POWER SUPPLY

Connect the power cord of the CD changer.
Power supplied through these outlets is turned ON/OFF by the equipment's POWER switch.

CAUTION:
Do not connect any cords other than the built-in CD changer power cord.

⑱ ILLUMINATION terminal

⑲ LAMP terminal

⑳ SPEAKERS terminal

Both HIGH POWER and LOW POWER are available. HIGH POWER is connected to the jukebox speakers and LOW POWER is connected to the external speakers on the rear side before shipment. These connections are interchangeable.

㉑ LEVEL CONTROL knob

LINE IN:
Adjusts the level of the signals input from the LINE IN terminal on the rear panel. To increase the input level, turn the knob to the MAX side. To decrease the input level, turn the knob to the MIN side.
STEREO/MONO switch:
Set this switch to the STEREO side when the input source is stereo. Set this switch to the MONO side when the input source is monophonic. If the input is made from a monophonic source and the switch is set to the STEREO side, either individual speaker will output sound.
MIC:
Adjusts the level of the signals input from the MIC IN terminal on the rear panel. To increase the input level, turn the knob to the MAX side. To decrease the input level, turn the knob to the MIN side.

㉒ AUDIO IN jacks

Connect to the AUDIO OUT jacks of the CD changer with the audio cord.

㉓ PLAYER 1, 2 and 3 GND terminals

㉔ HIGH POWER section

Adjusts the sound volume of the speakers connected to the HIGH POWER of the SPEAKERS terminal.
VOLUME control:
Adjusts the sound volume. Turning the control to the MAX side will increase the sound volume, whilst turning the control to the MIN side will decrease the sound volume. The right and left speakers can be separately adjusted. The inner control adjusts the right speaker, and the outer control adjusts the left speaker. To adjust the sound volume, turn either the inner or outer control while holding the other control.
STEREO/MONO switch:
Set this switch to the STEREO side when the input source is stereo. Set this switch to the MONO side when the input source is monophonic. When using multiple external speakers, setting the switch to the MONO side may result in a better output, even though the input source is stereo.

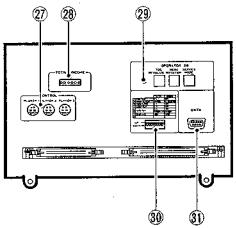
㉕ TONE CONTROL knob

BASS ..... Adjusts the bass level.
TREBLE ..... Adjusts the treble level.

㉖ LOW POWER section

Adjusts the sound volume of the speakers connected to the LOW POWER of the SPEAKERS terminal.
VOLUME control:
Adjusts the sound volume. Turning the control to the MAX side will increase the sound volume, whilst turning the control to the MIN side will decrease the sound volume. The right and left speakers can be separately adjusted. The inner control adjusts the right speaker, and the outer control adjusts the left speaker. To adjust the sound volume, turn either the inner or outer control while holding the other one.
STEREO/MONO switch:
Set this switch to the STEREO side when the input source is stereo. Set this switch to the MONO side when the input source is monophonic. When using multiple external speakers, setting the switch to the MONO side may result in a better output, even though the input source is stereo.

■ Controller section



㉗ CONTROL jacks
Connect to the CONTROL jack of the CD changer with the designated control cord.

㉘ TOTAL INCOME counter
Displays the amount of cash deposited. Reset impossible.

㉙ OPERATOR SW (switches)
TOC INITIALIZE:
After installing the magazine containing the discs into the CD changer, TOC (Table Of Contents) data can be read from the discs. The SELECTION PLAYING indicator displays "ONE MOMENT PLEASE" during initialization of TOC.
Press the OPERATOR switch also when replacing discs.
Hold down the button for several seconds until the jukebox makes a beep sound. Shut the door to start.
The correct song selection is possible only after TOC data is read, so it is necessary to make sure that the TOC data is initialized after installing or replacing discs.
MENU ROTATION:
To rotate the menu board.
SERVICE MODE:
To set to service mode, hold down the button for several seconds until the jukebox beeps. Holding down the button with the front door open will cancel the song being played back.

㉚ FUNCTION switches
See page 12.

㉛ DATA OUT terminal
Conforms to RS-232C. Allows the jukebox to communicate with computers via a modem with RS-232C interface. Users can download and upload various data set in the Service mode, and may also perform a setting of the Service mode.

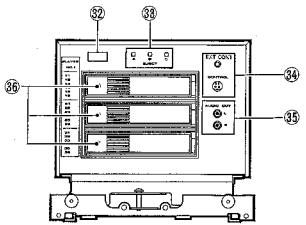
Function switches

To set functions of the jukebox.
The function setting is effective only when the power is switched ON.

Setting of the Function switches

No.	Panel display	UP DOWN	Function
1	FREE PLAY	ON OFF	Play without charge. Plays only when coins/bills are inserted.
2	ORDER TO PLAY	OPTIMUM AS SELECTED	Selects a song with the minimum access time. Plays back in the order of selection. If a song has been selected more than twice, that song will be played back only once.
3	TRACK LIMITS	ON OFF	Limits continuous playback of the same disc. This function is operated in the Service mode. Does not limit continuous playback.
4	ALBUM PLAY	ON OFF	Plays back all songs contained in a disc. The system changes to the Album Play mode when the correct amount for a disc is deposited into the jukebox. Does not perform ALBUM PLAY.
5	AUTO PLAY	ON OFF	Automatically selects and plays back songs when no song is selected. Does not perform AUTO PLAY.
6		RANDOM HIT RANDOM	Plays back random selections of the top 20 BEST HITS. The time for intervals and songs within top 20 can also be selected in the Service mode. The interval time is set to 5 minutes and the song selection is set to within the 6th to 10th position before shipment. Plays back songs other than top 20 BEST HITS at random. Songs within the top 20 can also be selected in the Service mode. The interval time is set to 5 minutes and song selection is set to within the top 20 before shipment.
7	BAUD RATE	1200 2400	Sets the baud rate of RS-232C to 1200 bps. Sets the baud rate of RS-232C to 2400 bps.

■ Compact disc changer section



㉜ HOUR METER

Displays the duration of time the unit has been used.

㉝ EJECT keys

Press to eject the magazines.

㉞ CONTROL jacks

CONTROL:
Connect to the specified CONTROL jacks (PLAYER 1) of the controller section.
EXT CONT.:
A terminal to externally control the CD changer. Usually not used.

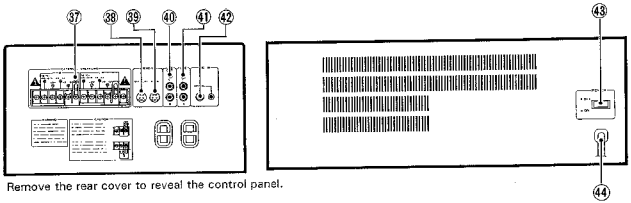
㉟ AUDIO OUT jacks

Connect to the specified AUDIO IN jack (PLAYER 1) of the amplifier section.

㊱ Magazine insertion slots

Insert the 6-disc magazine.
Make sure to insert all three magazines into the three slots.
Otherwise, the CD changer will not operate.
Insert an empty magazine if no disc is necessary.

(REAR PANEL)



• Remove the rear cover to reveal the control panel.

㊲ EXTERNAL SPEAKERS terminals

Can connect both low and high impedance speakers. Make the connection according to the impedance of the speakers in use.

CAUTION
THIS INSTALLATION SHOULD BE MADE BY QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES.

L: Connect the left speaker system as seen from the listening position.
R: Connect the right speaker system as seen from the listening position.
NOTE:

- *In case of connecting speakers to 2 Ω – 4 Ω or 70.7 CV terminals, tighten the screw and fasten the short bar for short circuit as illustrated.*
- *In case of connecting speakers to 4 Ω – 16 Ω terminals, tighten the screw and fasten the short bar to avoid short circuit as illustrated.*

㊳ REMOTE SATELLITE jack

A terminal for connecting the optional Remote Control Satellite JA-V150IR. When the remote control unit is used far away from the CD Jukebox, or when an obstacle exists between the remote control unit and the CD Jukebox, you can operate the Jukebox by pointing the remote control unit towards JA-V150IR, instead of the remote control light-receiving unit.

㊴ REMOTE WIRED jack

A terminal for connection of the optional wired remote control unit CU-V129. You can operate the CD Jukebox from a remote place by using the optional JC-74 extension cable (30 m/98 feet).

㊵ LINE OUT jacks

Audio is output.

㊶ LINE IN jacks

Can connect to the AUDIO OUT jacks of the external equipment. Input will be automatically made only when no signal is output from CD JUKE.

㊷ MIC IN jacks

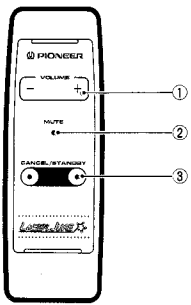
Connect the optional DM-V151 microphone with the control function. The microphone can be used for MIC PAGING.

㊸ POWER switch

Press to turn the power of the unit ON/OFF.

㊹ POWER cord

[REMOTE CONTROL UNIT]



① VOLUME keys

+: Increases the volume level.
−: Decreases the volume level.

② MUTE key

To temporarily decrease the sound volume level. Press the key again to resume normal sound volume level.

NOTE:

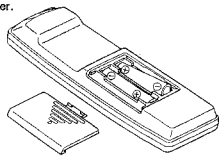
- *When activating the MUTE function with the remote control unit, VOLUME (up, down) cannot be used.*
  After the MUTE function is released, the VOLUME keys can be operated.
  The light-receiving indicator on the CD jukebox lights during the MUTE mode.

③ CANCEL/STANDBY keys

When the two keys are pressed simultaneously, the song stops and the system returns to the STANDBY mode. The SELECTION PLAYING indicator displays "PLAYING STANDBY." Pressing the keys again will cancel the STANDBY mode and the system starts selecting songs.

How to load batteries

1. Open the rear cover.
2. Install "AAA" type batteries (IEC R03/UM-4), correctly matching polarity.
3. Close the cover.



Incorrect use of batteries may lead to leakage or rupture.

Always be sure to follow these guidelines:

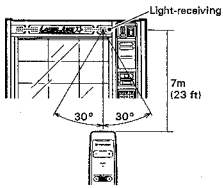
A:
Always insert batteries into the battery compartment, correctly matching the positive ⊕ and negative ⊖ polarities, as indicated inside the compartment.

B:
Never mix new and used batteries.

C:
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

Range of remote control

Distance: Within a range of approx. 7 meters (23 feet) from the remote sensor window on the CD jukebox.
Angle: Within approx. 30 degrees from the center of the remote sensor window on the CD jukebox.



Remote control will not be possible if there is an obstacle between the remote control unit itself and the remote sensor window on the CD jukebox.

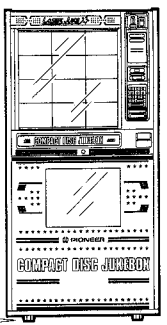
Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away, especially from the sensor window.

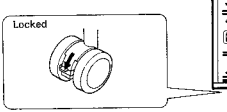
CAUTION:
The light-receiving indicator on the remote control unit does not light when the remaining power of the battery is insufficient. Replace the battery.

CASTER LOCKING:

The front casters are equipped with a locking mechanism. Make sure to lock the casters after installation as shown in the figure.

Open the main unit door before caster locking. (see page 6).





Lift the claw to unlock.

Lower the claw to lock. If locking is difficult, rotate the wheel a little.

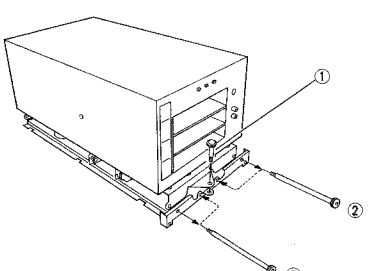
REMOVING THE TRANSPORT SCREWS FROM THE CD CHANGER

The vibration-protection of the CD changer is fixed with three screws for shipping.

① Remove the screws and spacer on the front center. (Keep the removed screws in the pocket inside the main unit door in case it becomes necessary to move the unit again.)

② Remove those screws on both sides of the front, and install them to the holes indicated by the arrows.

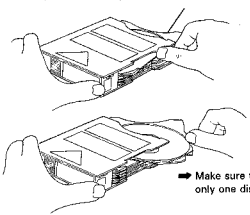
When transporting the CD changer, make sure to install the screws for protection.



LODING DISCS INTO THE MAGAZINES

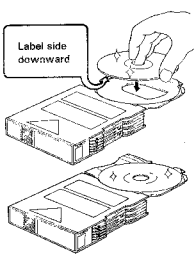
Insert any discs which you may have into the magazine. Up to six discs may be inserted. The numbering of the discs begins with 1 at the topmost tray, and then increases in order from 2 to 6 for the lower trays.

①Pull out only one disc tray.

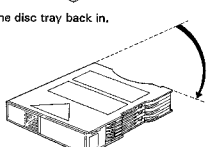


➡ Make sure to pull out only one disc tray.

②Position discs with the label side downward.



③Push the disc tray back in.



④Insert other discs by repeating steps ① to ③.

NOTE:

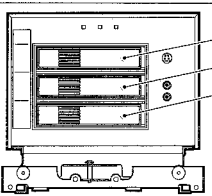
- *Please make sure to only pull out one disc tray at a time. (When a disc tray has been pulled out, do not pull out other disc trays.)*
- *If discs are inserted label side upward, it will not be possible for them to be played. Please make sure to insert them with the label side downward.*
- *Objects other than discs (song cards, explanations of disc contents, etc.), must never be inserted into the disc trays.*
- *Do not touch the playing surface of discs (the iridescent side) with hands or fingers.*

⑤Insert the magazine into the appropriate magazine insertion slot of the CD changer until it clicks.

⑥Insert the magazines into other magazine insertion slots by repeating step ① to ⑤.

IMPORTANT

Make sure to insert all three magazines into the three magazine insertion slots of the CD changer. Otherwise, the CD changer will not operate. Insert an empty magazine if no discs are required.



CAUTIONS REGARDING HANDLING OF MAGAZINES

- When inserting a magazine into the changer, make sure that the direction of insertion is correct.
- After use, store in the case provided. Do not place in locations subjected to high temperatures or exposed to direct sunlight.
- Do not take magazines apart.
- Be careful not to drop or hit magazines against things. Also, do not apply strong force to trays which have been withdrawn.
- Application of benzene, thinner, insecticide or other volatile liquids to a magazine may damage the surface, so keep magazines away from such substances.

CAUTION

This magazine is for use with the CD JUKE BOX and, because of the wear which naturally occurs, should be replaced at 6 monthly intervals. When replacing the magazine, ask for the JD-MV201 magazine sold separately.

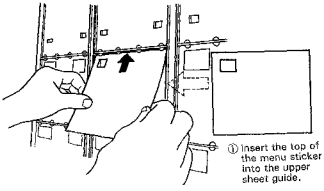
The 6 monthly interval is a rule of thumb. The real replacement interval depends on the frequency of use and the circumstances. The ball bearing becomes worn after the same tray has been used for play 5,000 — 8,000 times. Using the worn ball bearing increases the load to the mechanism, resulting in damage on the drive motor or other parts. Early replacement is therefore recommended.

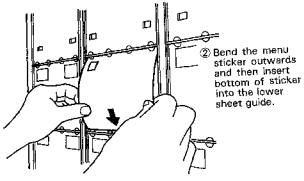
MENU STICKERS

The attached procedure provides a suggested method of installation of the disc number stickers on the menu board for the Pioneer CJ-V99/CJ-V77 Compact Disc Jukebox. While a variety of systems can be used, the one suggested has the following advantages:

- The pattern works equally well with 1, 2, or 3 CD changer and dose not require re-labeling the board when the number of changers are changed.
- Up to 18 compilation discs can be used with the pre-printed compilation title strips.
- Title strips for the compilation discs are evenly distributed around all three side of the menu assembly.

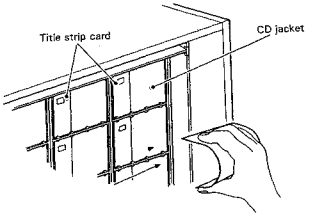
Please note their are two sheets of stickers in a set: one has the number 11 in the upper left corner, and the other has the number 21. Both sheets are required, even if only one CD changer is used.





Using CD jackets

A normal CD jacket can be inserted, instead of the Menu sticker. In such a case, indicate the song number by inserting the title strip card into either side of the CD jacket.



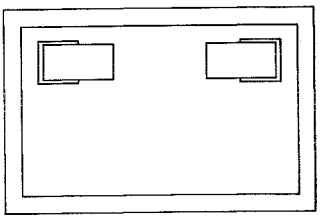
NOTE:
In order to fit a regular size CD jacket into the menu board, it may be necessary to adjust the jacket size.

Menu Numbering System:

The menu numbering system pictured at the right is suggested as a convinient method of identifing the disc number to be played. While a variety of systems could be used, this system has the advantage that the same system works equally well with 1, 2, or 3 CD changers. Consequently, the need to re-lable the menu board is eliminated when a changer is added or removed.

This system is designed to use 9 compilation discs as provided with the pioneer Compilation Disc Program. CD Jukes which are fitted with only one player have the compilation discs installed in the first 9 disc locations (11 thru 23). Systems using two or more CD changers have the discs installed in the first 9 disc locations of changer 2 (41 thru 53).

The labels provided have each number printed twice. The ultimate location allows the use of Rowe style title strips, if desired. The number stickers are to be installed as illustrated below:



Approximately 1/2" must be trimmed from one edge of the CD jacket when the Rowe style strips are used.

Menu Surface 1

11 41	12 42	13 43
14 84	15 85	16 86
21 64	22 65	23 66
71 24	72 25	73 26

Menu Surface 2

11 54	12 55	13 56
14 44	15 45	16 46
21 91	22 92	23 93
74 31	75 32	76 33

Menu Surface 3

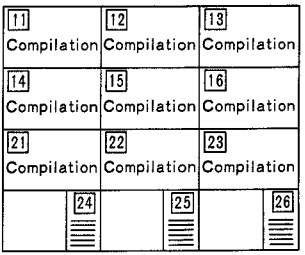
11 81	12 82	13 83
14 61	15 62	16 63
21 51	22 52	23 53
94 34	95 35	96 36

Menu Configuration for 1 CD Changer:

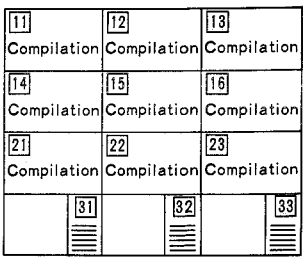
The menu configuration shown at the right is designed for the use of 9 compilation discs and one CD changer. In this configuration, there are 18 more menu locations then there are available discs. To fill up the extra spaces,title cards for the compilation discs are printed on three cards: one for selections 1 thru 5, one for selections 6 thru 10 and one for selections 11 thru 15. In this way, there are a total of 27 title cards for the 9 compilation discs,resulting in 18 extra menu cards.This is the number needed to fill up the spare locations on the menu board. A title strip is provided with all 15 selections listed as well. This strip is used for systems with 2 or more CD changers.

The compilation discs are to be installed in disc locations 11 thru 23.

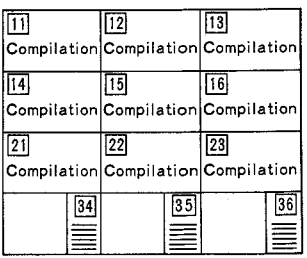
Menu Surface 1



Menu Surface 2



Menu Surface 3



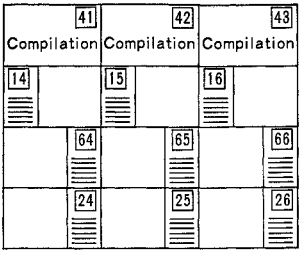
Menu Configuration for 2 CD Changers:

The menu configuration shown at the right is designed for the use of 9 compilation discs and two CD changers. In this configuration, there are 36 menu locations and 36 available discs. Consequently, one menu location is to be used for each disc.

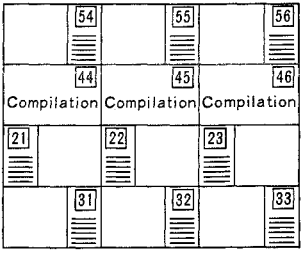
For compilation discs, use the compilation title strips which list all 15 selections on one strip. The three title strips with 5 selections per strip are used in systems fitted with only one CD changer.

The compilation discs are to be installed in the 2nd CD changer in disc locations 41 thru 53.

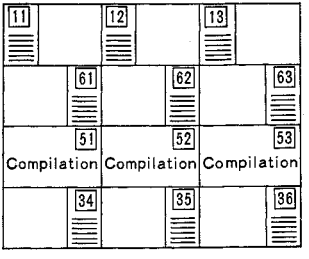
Menu Surface 1



Menu Surface 2



Menu Surface 3



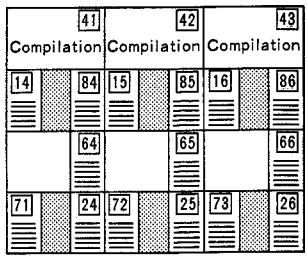
Menu Configuration for 3 CD Changers:

The menu configuration shown at the right is designed for the use of 9 compilation discs and three CD changers. In this configuration, there are 36 menu locations and 54 available discs.Consequently, it is necessary to list the titles for two CDs on each of 18 menu locations.

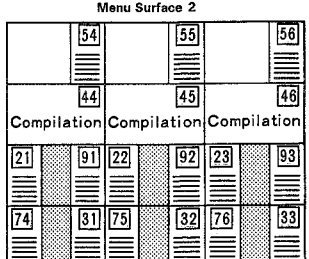
For the compilation discs, use the title strips which list all 15 selections on one strip. The three title strips with 5 selections per strip are used in systems fitted with only one CD changer.

One compilation disc is to be installed in the 2nd CD changer in disc locations 41 thru 53.

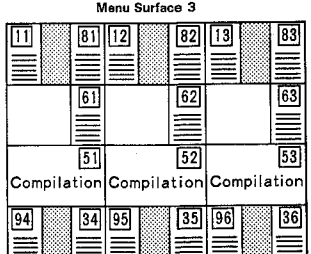
Menu Surface 1



Menu Surface 2



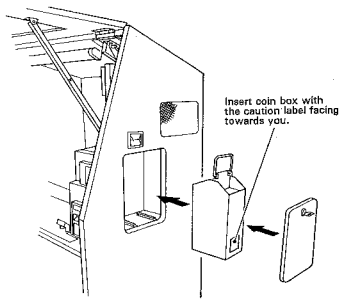
Menu Surface 3



INSTALLING THE COIN BOX

With CJ-V99, install the Coin Box by the following procedure. With CJ-V77, install the coin or bill acceptor (→ page 71~73), then install the Coin Box.

1. Remove the anti-burglar key from the glass menu board. Insert the key into the key hole and turn it clockwise to open the charge storage cover.
2. Remove the Coin Box from the accessory box.
3. Install the Coin Box while holding its handle.

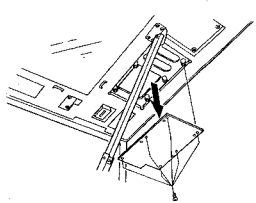


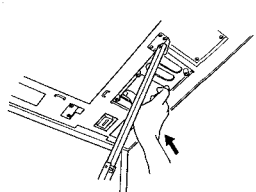
ATTACHING THE OPERATING GUIDE DISPLAY PLATE

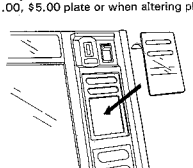
Attach the correct plate indicating the correct charge for a single song.
Remove the seal from the rear side before attaching the plate.

Replacing the Operation Guide Display plate

1. Open the MENU DOOR.
2. Remove the six screws to remove the base board indicated in the figure.
3. Remove the base board.
4. Remove the plate by carefully pushing it from the inside to prevent damage.
5. Close the MENU DOOR.
6. Remove the remaining adhesive double-side tape by using a screwdriver or similar tool.
7. Remove the seal from the rear side of a new plate and attach it.
   The jukebox default values have been set to:
   3 PLAYS/$1.00
   7 PLAYS/$2.00
   18 PLAYS/$5.00
   Make allchanges in the service mode when using the $0.25, $1.00, $5.00 plate or when altering play numbers.







HOW TO USE SERVICE MODE

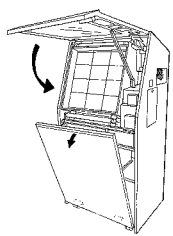
What is the service mode?

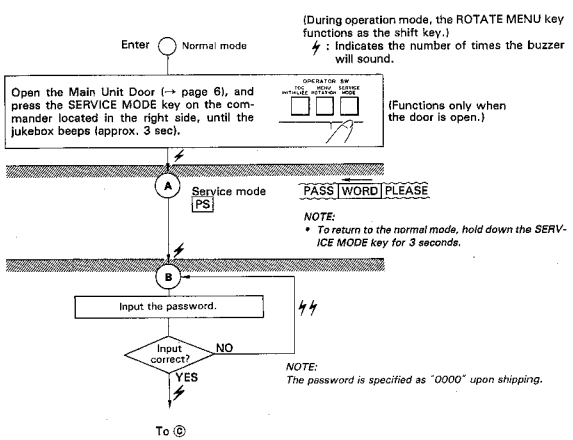
In the service mode, you can specify Free Play (playback free of charge), the charge for a single song, viewing data indicating how many times the song is to be played back, and disabling playback for specific songs.

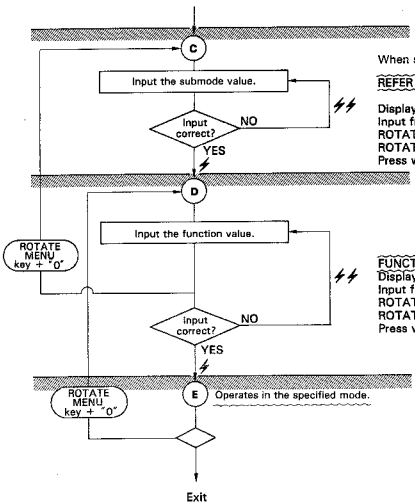
This section explains how to enter/exit the service mode, and also indicates what can be performed upon entry/exit and how to operate the numeric keys and the ROTATE MENU key.

SERVICE MODE (OPERATION MODE) flowchart

How to enter/exit the service mode




Enter
Normal mode
(During operation mode, the ROTATE MENU key functions as the shift key.)
ϟ : Indicates the number of times the buzzer will sound.
Open the Main Unit Door (→ page 6), and press the SERVICE MODE key on the commander located in the right side, until the jukebox beeps (approx. 3 sec).
OPERATOR SW
INITIALIZE
ROTATION
SERVICE MODE
(Functions only when the door is open.)
A
Service mode
PS
PASS WORD PLEASE
NOTE:
• To return to the normal mode, hold down the SERVICE MODE key for 3 seconds.
B
Input the password.
ϟϟ
Input correct?
NO
YES
NOTE:
The password is specified as "0000" upon shipping.
To ⓒ

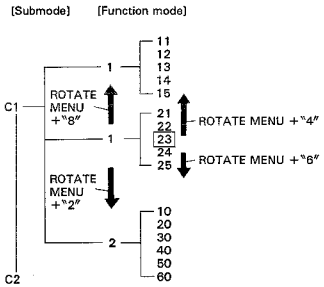

C
Input the submode value.
Input correct?
NO
YES
When selecting "C1" mode.
REFER TO A UDITS
Display will be changed by:
Input from 0 to 9 or
ROTATE MENU key + "2"; (increment)
ROTATE MENU key + "8"; (decrement)
Press with the BEST HITS key.
D
Input the function value.
ROTATE MENU key + "0"
FUNCTI ON P LEASE
Display will be changed by:
Input from 0 to 9 or
ROTATE MENU key + "2"; (increment)
ROTATE MENU key + "8"; (decrement)
Press with the BEST HITS key.
Input correct?
NO
YES
ROTATE MENU key + "0"
E
Operates in the specified mode.
Exit

Shift key

During the service mode, the ROTATE MENU key functions as the shift key. When one of keys "0", "2", "4", "6" or "8" or "9" are pressed while depressing the ROTATE MENU key, the operation will be as follows:

ROTATE MENU keys	+	0	Reverses the progress of the service mode. Progress can be reversed as Ⓔ → Ⓓ or Ⓓ → Ⓒ (see the SERVICE MODE flowchart).
		2	① Increases the numeric value during input of the value for submode or function mode. ② Increases the submode value during execution (step Ⓔ). ③ Increases the function mode value (upper digits) during execution (step Ⓔ).
		8	① Decreases the numeric value during input of the value for submode or function mode. ② Decreases the submode value during execution (step Ⓔ). ③ Decreases the function mode value (upper digits) during execution (step Ⓔ).
		6	Increases the function mode item (lower digits) during execution (step Ⓔ).
		4	Decreases the function mode item (lower digits) during execution (step Ⓔ).
		9	Alternately displays data for the mode and the related message every time the key is pressed.

(Example) During execution in the submode 1 and the function mode 23.



Display and Usage

During the service mode, display is made with the indicators of SELECTION REMAINING and SELECTION PLAYING.

1. Inputting the password

Displays "PS".
Input the password with the number keys.

(Example) 1 2 3 4
Upon correct input, "beep" will sound and it changes to submode input.
Upon incorrect input, "beep-beep" will sound. Input the password correctly.

2. Inputting submode

Displays "C".
Input the submode with the numeric keys.
(Example) 2
When the BEST HITS key is pressed, "beep" will sound and it changes to function mode input.
When a number not existing in the submode is input, "beep-beep" will sound. Input a correct number.

3. Inputting function mode

The "–" light up for the first two digits.
Input the value for the function mode (an upper digit or an upper and lower digit) with the numeric keys.
(Example) 0
When the BEST HITS key is pressed, "beep" will sound and changes to execution mode.
When number(s) not existing in the function mode are input, "beep-beep" will sound and it reverses to the previous display. Input correct number(s).

4. Display of the CREDIT Indicator in the Manual Service Mode

Unlike the SELECTION PLAYING indicator, the display of the CREDIT indicator is the same for all functions. In the service mode, the CREDIT indicator consists of two display levels. The first display shows the submode number and the second display shows the function number. The two levels are alternately displayed for approximately 1 second.

(Example) Indicating that the current mode is 4-10 (LOCK OUT NUMBER).

Service mode configuration

The service mode consists of nine submodes. Each submode has several function modes. For example, with an indication of "1-23," 1 is a submode number and 23 is a function mode. When there is no classification for the lower digit of the function mode, the left digit will be expressed as "0."

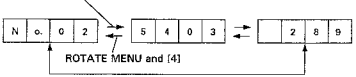
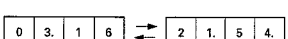
Submode No.	Details (function mode No.)	Number
1. REFER TO AUDITS	1. PLAY AUDITS (counting after the previous reset) −1	(1-11-15)
	2. PLAY AUDITS (counting after the previous reset) −2	(1-21-25)
	3. PLAY AUDITS (counting after the previous reset) −3	(1-31-38)
	4. CASH AUDITS (counting after the previous reset)	(1-41-40)
	5. PLAY AUDITS (cannot reset after shipping) −1	(1-51-55)
	6. PLAY AUDITS (cannot reset after shipping) −2	(1-61-65)
	7. CASH AUDITS (cannot reset after shipping)	(1-71-70)
2. REFER TO OTHER DATA	1. DISC RANKING	(2-10)
	2. BEST HIT NUMBER	(2-20)
	3. CANCEL DISC	(2-30)
	4. ERROR HISTORY	(2-40)
	5. PLAY TIME A DAY	(2-50)
	6. PLAY TIME by MANUAL	(2-60)
3. REFER TO SET DATA	1. TOTAL SET DISC	(3-10)
	2. LOCK OUT NUMBER	(3-20)
	3. PRIORITY NUMBER	(3-30)
	4. PREMIUM NUMBER	(3-40)
	5. HIT MAKER NUMBER	(3-50)
	6. B.G.M. DISC	(3-60)
	7. CREDIT RATE	(3-70)
	8. SOFT VERSION	(3-80)
	9. I.D. NUMBER	(3-90)
4. FIX ON SPECIAL NUMBER & CREDIT	1. LOCK OUT NUMBER	(4-10)
	2. PRIORITY NUMBER	(4-20)
	3. PREMIUM NUMBER	(4-30)
	4. HIT MAKER NUMBER	(3-40)
	5. B.G.M. DISC	(4-50)
	6. AUTO PLAY NUMBER	(4-61-62)
	7. CREDIT RATE	(4-70)
	8. PREMIUM NUMBER RATE	(4-80)
	9. COIN VALUE	(4-91-97)

Submode No.	Details (function mode No.)	Number
5. FIX ON TIME & SCHEDULE	1. HAPPY HOUR SCHEDULE 2. AUTO PLAY SCHEDULE 3. FREE PLAY SCHEDULE 4. DATA RETRIEVAL SCHEDULE 5. TIME or INTERVAL −1 6. TIME or INTERVAL −2 7. REAL TIME CLOCK	(5-10) (5-20) (5-30) (5-40) (5-51-53) (5-61-62) (5-71-76)
6. FIX ON OTHER DATA	1. PASSWORD 2. SAME DISC CONTINUOUS PLAY 3. B.G.M. VOLUME 4. I.D. NUMBER 5. FRONT PANEL SELECTION	(6-11-12) (6-20) (6-30) (6-40) (6-50)
7. CLEAR DATA	1. AUDITS (Counting after the previous reset) 2. DISC INFORMATION 3. SELECTION INFORMATION 4. ERROR HISTORY 5. CREDIT 6. SPECIAL NUMBER 7. for OPERATOR 8. for REPAIR MAN	(7-11-12) (7-20) (7-30) (7-40) (7-50) (7-61-65) (7-70) (7-80)
8. AGING	1. AGING CYCLE TIME 2. AGING (A) 3. AGING (B) 4. AGING (C)	(8-10) (8-20) (8-30) (8-40)
9. TEST	1. L.E.D. ALL LIGHTING 2. FUNCTION SW READING 3. L.E.D. LIGHTING CHECK	(9-10) (9-20) (9-30)

Setting of functions in the Manual Service mode and display of the SELECTION PLAYING indicator

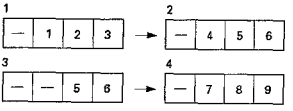
Service mode function	Submode No.	Function mode No.		
Displays all songs selected in the Free Play mode. When selecting the entire disc, the number of songs contained in that disc will be added to the Free Play mode.	C1: REFER TO AUDITS • The SELECTION PLAYING indicator displays "REFER TO AUDITS."	1	11	PLAY BACK AUDITS 1 (counting after the previous reset)
Displays all songs selected in the Paid Play mode. When selecting the entire disc, the number of songs contained in that disc will be added to the Paid Play mode.			12	
Displays the number of times songs were selected from areas other than BEST HITS in the Paid Play mode.			13	
Displays the number of times songs were selected from BEST HITS in the Paid Play mode.			14	
Displays the number of times songs were selected from ALBUM in the Paid Play mode.			15	
Displays the number of times PRIORITY songs were specified in the Paid Play mode.			21	PLAYBACK AUDITS 2 (counting after the previous reset)
Displays the number of times PREMIUM songs were specified in the Paid Play mode.			22	
Displays the number of times HIT MAKER songs were specified in the Paid Play mode.			23	
Displays the number of times songs were selected in the Paid Play mode during HAPPY HOUR.			24	
Displays the number of times songs were repeatedly reserved in the Paid Play mode.			25	
Displays the total number of selection times for the three CD changers.			31	PLAYBACK AUDITS 3 (counting after previous reset)
Displays the number of times songs were selected from the 1st CD changer.			32	
Displays the number of times songs were selected from the 2nd CD changer.			33	
Displays the number of times songs were selected from the 3rd CD changer.			34	
Displays the total number of times of operations (including operations such as TOC and initialization, other than the song selection) of the three CD changers.			35	
Displays the total number of times of operations of the 1st CD changer.			36	
Displays the total number of times of operations of the 2nd CD changer.			37	
Displays the total number of times of operations of the 3rd CD changer.			38	
Displays the total of cash (number of standard units). The total amount of money is represented by multiplication of the standard unit.			41	CASH AUDITS (counting after previous reset)
Ch.1			42	
Ch.2			43	
Ch.3			44	
Ch.4			45	
Ch.5			46	
Ch.6			47	
Displays the total number of input coins set in each channel of the coin acceptor.			48	
Displays the total number of $1 bills put in the jukebox.			49	
Displays the total number of $5 bills put in the jukebox.			40	
Records the total number of songs selectable by depositing coins/bills.				

Service mode function	Submode No.	Function mode No.		
Displays all songs selected in the Free Play mode. When selecting the entire disc, the number of songs contained in that disc will be added to the Free Play mode. Displays all songs selected in the Paid Play mode. When selecting the entire disc, the number of songs contained in that disc will be added to the Paid Play mode. Displays the number of times songs were selected from areas other than BEST HITS in the Paid Play mode. Displays the number of times songs were selected from BEST HITS in the Paid Play mode. Displays the number of times songs were selected from ALBUM in the Paid Play mode.	C1: REFER TO AUDITS • The SELECTION PLAYING indicator displays "REFER TO AUDITS."	1	51 52 53 54 55	PLAYBACK AUDITS 1 (cannot reset after shipment)
Displays the number of times PRIORITY songs were specified in the Paid Play mode. Displays the number of times PREMIUM songs were specified in the Paid Play mode. Displays the number of times HIT MAKER songs were specified in the Paid Play mode. Displays the number of times songs were selected in the Paid Play mode during HAPPY HOUR. Displays the number of times songs were repeatedly reserved in the Paid Play mode.			61 62 63 64 65	PLAYBACK AUDITS 2 (cannot reset after shipment)
Displays the total of cash (number of standard units). The total amount of money is represented by multiplication of the standard unit. Ch.1 Ch.2 Ch.3 Ch.4 Ch.5 Ch.6 Displays the total number of input coins set in each channel of the coin acceptor. Displays the total number of $1 bills put in the jukebox. Displays the total number of $5 bills put in the jukebox. Records the total number of songs selectable by depositing coins/bills. The display will indicate numbers to 999,999. When 9,999 or less, the entire number will be indicated at once. When 10,000 or over, the first two digits will be shown for approximately one second before displaying the final four digits. Displays will appear for one second before alternating to the other display. When displaying the first two digits, the display will insert a comma in the appropriate place. Example: 123,456 times. 			71 72 73 74 75 76 77 78 79 70	CASH AUDITS (cannot reset after shipment)

Service mode function	Submode No.	Function mode No.		
Displays the titles of the most frequently selected songs and the least selected songs in sequence, together with the number of times that the selection has been made Displays the top 20 of BEST HITS. Displays songs in sequence of the number of times of cancellation by the SKIP function The displays consist of three levels. The first display shows the order, the second shows the disc number (or song number), and the third shows the number of times of selection (cancellation). In this mode, the disc number (or song number) is displayed together with the number of times it has been selected. Use the ROTATE MENU and [6] keys or the ROTATE MENU and [4] keys to scroll up and down. (Example) The song in second place is song number 5403, and was selected 289 times. ROTATE MENU and [6]  	C2: REFER TO OTHER DATA.	2	10 20 30	DISC RANKING BEST HIT NUMBER CANCEL DISC
Displays the most recent 20 errors. The display consists of two levels. The first display shows the date and time in which the error occurred, and the second shows an error code. In this mode, the most recent errors will be displayed. Use the ROTATE MENU and [4] keys and the ROTATE MENU and [6] keys to scroll the displayed data. (Example) Search error (error code 21) occurred at disc number 5400 on March 16.  			40	ERROR HISTORY
Displays the total number of songs selected in the Paid Play mode for every day for the last 64 days. The display consists of two levels. The first display shows the date and time, and the second displays the number of times of selection. In this mode, the data for the day will be displayed. Use the ROTATE MENU and [4] keys and the ROTATE MENU and [6] keys to scroll the displayed date and time. (Example) Search error (error code 21) occurred at disc number 5400 on March 16.			50	PLAY TIME A DAY

Service mode function	Submode No.	Function mode No.		
Displays the number of times of selection of a desired song number. Specify a song number using the numeric keys, and press the BEST HITS key. The song number and the number of times of playback will be alternately displayed. If an incorrect operation was performed, the system beeps twice and waits for the next input. (Example) The song number 1210 was played back 252 times. 1 2 1 0 → 2 5 2.	C2: REFER TO OTHER DATA.	2	60	PLAY TIME BY MANUAL

Service mode function	Submode No.	Function mode No.		
Displays the number of discs set in the CD player.	C3: REFER TO SET DATA.	3	10	TOTAL SET DISCS
Displays the song specified as playback disable, and the period of disabled time for that song.			20	LOCK OUT NUMBERS
Displays the songs specified as PRIORITY songs.			30	PRIORITY NUMBERS
Displays the songs specified as PREMIUM songs.			40	PREMIUM NUMBERS
Displays the songs specified as HIT MAKER songs.			50	HIT MAKER NUMBERS
Displays the disc specified as BGM disc. The songs (disc) which have been selected can be viewed for reference. Song (disc) data which has been selected can be viewed by simultaneously pressing the shift key and the numerical 4 or 6 key. The data will appear alternately showing the first part of the data and then the second part. For song (data) selected with the 3-20 keys, use the "BEST HIT" key to move through the song numbers to the final time display. Simultaneously press the shift key and the numerical 4 or 6 key. Selected song (disc) data will appear alternately in the display showing the first part of the data and then the second part.			60	B.G.M. DISCS
Displays the specified credit rate. The specified five patterns can be viewed by two displays. Use the ROTATE MENU and [4] keys and the ROTATE MENU and [6] keys to scroll the displayed data. (Example) Can select five songs for 3 dollars. $ 3. 0 0 → ← — — 0 5			70	CREDIT RATE
Displays the software version of the microcomputer. (Example) Version 1.0 V — 1. 0			80	SOFT VERSION

Service mode function	Submode No.	Function mode No.		
Displays the ID number as follows: 1st display ··· First three digits of the location number 2nd display ··· Last three digits of the location number 3rd display ··· First two digits of the serial number 4th display ··· Last three digits of the serial number * An ID number consists of a 6-digit location number and a 5-digit serial number. (Example) Location number "123456" Serial number "56789"  	C3: REFER TO OTHER DATA.	3	90	ID NUMBER

Service mode function	Submode No.	Function mode No.		
A maximum of 25 songs (discs) can be disabled.	C4: FIX ON SPECIAL NUMBER & CREDIT	4	10	LOCK OUT NUMBERS

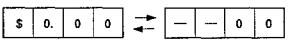
Setting LOCK OUT songs
There are five setting items (five displays) for a single song to be disabled.
1st display ··· Song number to be disabled
2nd display ··· Day to start disable
3rd display ··· Time to start disable
4th display ··· Day to end disable
5th display ··· Time to end disable
The 1st display shows the song number previously input or "----" for initial input. Input a desired song number. If only the song number is input, that song will be disabled, regardless of the schedule (day and time to be started/ended).
Use the numeric keys to input a number from 0 to 9 for the 2nd and 4th displays, and a 4-digit number for the 3rd and 5th displays.
For the 2nd and 4th displays, the numeric keys correspond as follows:

Key	Display
0	SUN (Sunday)
1	MON (Monday)
2	TUE (Tuesday)
3	WED (Wednesday)
4	THU (Thursday)
5	FRI (Friday)
6	SAT (Saturday)
7	ED (every day)
8	WD (Monday through Friday)
9	MtS (Monday through Saturday)

The setting can be changed freely.
With the 3rd and 5th displays, the first two digits express hours and the last two digits express minutes. Input the desired time in a 24-hour system.
If you input incorrect data, the system beeps twice and returns to the previous display.
To specify data, press the BEST HITS key. The system beeps once. After blinking for 2 seconds, the display lights and proceeds to the next item. However, the last item (time to end disable) will remain lit.
To specify other data, go to the next pattern using the ROTATE MENU and [6] keys, and perform the same procedure. To return to the previous pattern, use the ROTATE MENU and [4] keys.
To delete data, press the CLEAR key.

NOTE:
Restrictions on setting schedule
① If you specify ED (everyday) for the day to start disable, the day to end disable should also be ED. The same is true for specifying WD and MtS.
② If the day to start disable is the same as the day to end disable, "time to end disable" should be a number larger than "time to start disable."
③ The period between the day to start disable and the time to end disable should be within 2 days.

Service mode function	Submode No.	Function mode No.		
A maximum of 25 songs/discs (PRIORITY songs/discs) can be set for inserting at the beginning of a reserved song.	C4: FIX ON SPECIAL NUMBER & CREDIT	4	20	PRIORITY NUMBERS
A maximum of 25 songs (PREMIUM songs) can be specified for a multiple according to the 4-80 rate that of normal charge.			30	PREMIUM NUMBERS
A maximum of 25 songs (HIT MAKER songs) can be specified for a charge half that of normal charge.			40	HIT MAKER NUMBERS
A maximum of 54 discs can be specified to be played as background music when no song is reserved. How to set The initial display shows a blinking number if data was previously input, and "----" for initial input ("–00" will be displayed for 4-50 only). Input the desired song/disc number. If you input incorrect data, the system beeps twice and returns to the previous display. To specify data, press the BEST HITS key. The system beeps once to confirm the setting, and the display stops blinking and remains lit. To specify other data, go to the next pattern using the ROTATE MENU and [6] keys, and perform the same procedure. To return to the previous pattern, use the ROTATE MENU and [4] keys. To delete data, press the CLEAR key.			50	B.G.M. DISCS
Selects the songs for automatic playback. Can specify songs for AUTO PLAY in the order of selection made from the top 20. The default setting is the songs from the 6th to 10th places. Can specify songs for RANDOM AUTO PLAY by selecting all songs from the top 20, except the songs ranging from the 1st place to a specified place. The default setting is the songs from the 1st to 20th places. How to set For 4-61, use the numeric keys to input a 4-digit number by specifying the higher order in the first two digits of the SELECTION PLAYING indicator, and the lower order in the last two digits. To set the data, press the BEST HITS key. The item 4-62 uses only the last two digits. Input data in the same manner as with 4-61.			61 62	AUTO PLAY NUMBER

Service mode function	Submode No.	Function mode No.		
Sets the charge for a single song (charge). How to set This display consists of two levels. In this mode, the initial display, as shown in the figure below will appear.  The 1st display shows a blinking "$" symbol followed by a blinking "0.00." Input the desired charge ($0.25, $0.50, $0.75, $1 to $5). Input data will blink until it is set. After setting, the data blinks for 2 seconds, then the system proceeds to the 2nd display. On the 2nd display, input the number of songs to be played back for the coins/bills input. If you input incorrect data, the system beeps twice. To specify data, press the BEST HITS key. The system beeps once to confirm the setting. After blinking for 2 seconds, the data remains lit, because the 2nd display is the *last* level. If an overlapped amount of charge is input, the older (previous) data will be deleted to prevent overlapped data. If "$0.00" is input or the CLEAR key is pressed, both the amount of charge and the number of times of playback on the display will be deleted. To specify other data, go to the next pattern using the ROTATE MENU and [6] keys and perform the same procedure. To return to the previous pattern, use the ROTATE MENU and [4] keys.	C4: FIXON SPECIAL NUMBER & CREDIT	4	70	CREDIT RATE
Sets the number of times (2 to 5) that normal charge should be specified for the PREMIUM songs. How to set The initial display shows a blinking number if data was previously input, and "2" for initial input. Input a desired number (2 to 5). If you input incorrect data, the system beeps twice and returns to the previous display. To specify data, press the BEST HITS key. The system then beeps once to confirm the setting, and the display stops blinking and remains lit.			80	PREMIUM NUMBER RATE

Service mode function	Submode No.	Function mode No.		
Amount of coins specified for standard.	C4: FIX ON SPECIAL NUMBER & CREDIT	4	91	COIN VALUE
Ch.1 value Ch.2 value Ch.3 value Ch.4 value Ch.5 value Ch.6 value			92 93 94 95 96 97	

Sets the number of times (0 to 100) that standard coin value should be specified for the coin of each channel of the coin acceptor.

How to set
The coin acceptor of this CD Jukebox is designed to recognize and use only 25-cent coins. The NRI coin acceptor, which is capable of recognizing six types of coins, can also be used.
First, set the amount of coins ($0.25, 0.50, 0.75, 1 to 5) that is specified as standard in 4-91. This value should be the minimum amount of the coins to be used, and should be one to an integer of the amount of other coins. Input an integer (0 to 100) that expresses the coins specified in 4-92 to 97, and this will then display multiplication of the standard coin value. Inputting a "0" will disable that channel.
Default is set with American denomination coins (dollars and cents). Channel 4 accepts 25 cents (standard coin).
Default → Channel 4 Standard coin 25 cents

Channel	ch.1	ch.2	ch.3	ch.4	ch.5	ch.6
Coin value	0	0	0	1	0	0

(Example)
To assign 25 cents (standard coin) to Channel 4, 50 cents to Channel 1, and 1 dollar to Channel 2, set the coin values as follows:

Channel	ch.1	ch.2	ch.3	ch.4	ch.5	ch.6
Coin value	2	4	0	1	0	0

Display will show as follows:
4-91

$	0.	0	0

4-92 to 97

	0	0	0

With 4-91, a blinking "$" symbol is displayed in the first digit followed by a blinking "0.0." With 4-92, the display shows a blinking "_000." Input the desired data. If you input incorrect data, the system beeps twice and returns to the previous display.
To specify data, press the BEST HITS key. The system beeps once to confirm the setting, and the display stops blinking and remains lit.
To specify other data, go to the next pattern using the ROTATE MENU and [8] keys, and repeat the same procedure. To return to the previous pattern, use the ROTATE MENU and [4] keys.

Service mode function	Submode No.	Function mode No.		
A maximum of 10 patterns of the HAPPY HOUR schedule can be specified. The charge will be half that of the normal charge during HAPPY HOUR. The HIT MAKER songs will also remain half that of normal charge.	C5: FIX ON TIME AND SCHEDULE	5	10	HAPPY HOUR SCHEDULE
A maximum of 10 patterns of the AUTO PLAY schedule can be specified. The specified songs will be played back automatically when no song is selected.			20	AUTO PLAY SCHEDULE
A maximum of 10 patterns of the FREE PLAY schedule can be specified. Songs can be selected free of charge during FREE PLAY and, at that time, the SELECTION REMAINING indicator displays "FP."			30	FREE PLAY SCHEDULE
A maximum of 10 patterns of the DATA RETRIEVAL schedule can be specified. Data retrieval schedule can only be performed using a modem. Continuous access is possible when connected to a computer. During the DATA RETRIEVAL schedule, data will be automatically transferred to the computer. The day and time to start and end these functions can be specified. How to set These mode displays consist of four levels. The first display shows the day to start the schedule, and the second shows the time to start the schedule. The third display shows the day to terminate the schedule, and the fourth shows the time to terminate the schedule. Use the numeric keys to input a number from 0 to 9 for the 1st and 3rd displays, and a 4-digit number for the 2nd and 4th displays. For the 1st and 3rd displays, the numeric keys correspond as follows: Key / Display 0 SUN (Sunday) 1 MON (Monday) 2 TUE (Tuesday) 3 WED (Wednesday) 4 THU (Thursday) 5 FRI (Friday) 6 SAT (Saturday) 7 ED (every day) 8 WD (Monday through Friday) 9 MtS (Monday through Saturday) The setting can be changed freely until it is specified. If you input incorrect data, the system beeps twice and returns to the previous display. With the 2nd and 4th displays, the first two digits expresses hours and the last two digits expresses minutes. Input the desired time in a 24-hour system. If you input incorrect data (other than 0 to 6), the system beeps twice and returns to the previous display. To specify data, press the BEST HITS key. The system beeps once, the display stops blinking after 2 seconds, and the system changes to the next item. However, the data remains lit in the last display. To clear data, press the CLEAR key. (Example) Saturday PM 11:30 to Sunday AM 1:00 1 [ ][S][A][T] → 2 [2][3.][3][0] 3 [ ][S][U][N.] → 4 [0][1.][0][0]		40	DATA RETRIEVAL SCHEDULE

Service mode function	Submode No.	Function mode No.		
Cancels the Skip mode after skipping the specified number of tracks (0 to 99). Inputting "0" will not cancel the Skip mode. The default setting is "0."	C5: FIX ON TIME AND SCHEDULE	5	51	TIME OR INTERVAL −1
Specifies the number of times a song will be canceled (0 to 99) before it is disabled. Inputting "0" will not disable a song once. The default setting is "0."			52	
Sets intervals of AUTO PLAY in units of one minute (0 to 99). The default setting is "5." How to set Specify the number of times required in the last two digits by using the numeric keys. To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking and remains lit.			53	
Limits playback time in units of one minute (0 to 15). Inputting "0" does not limit playback time. The default setting is "0."			61	TIME OR INTERVAL −2
Specifies the intervals of the menu rotator in units of one minute (0 to 15). The default setting is "1." How to set Input a value between 0 and 15. If you input incorrect data, the system beeps twice and returns to the previous display. To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking and remains lit.			62	
Displays the year.			71	CALENDER CLOCK
Displays the month (numerically).			72	
Displays the day (numerically).			73	
Displays the hours.			74	
Displays the minutes.			75	
Displays the day (Mon, Tues, etc.). How to set With 5-71, the last two digits blink and wait for entry. With 5-72 and 5-73, first the upper two digits blink and wait for entry. After setting the data for the upper two digits, the last two digits will blink and wait for entry. Input data for 5-74 and 5-75 in the same manner. For 5-76, input a corresponding number (0 to 9) for the data (see 5-10). To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking and remains lit. To specify other data, go to the next item using the ROTATE MENU and [6] keys, and repeat the same procedure. To return to the previous item, use the ROTATE MENU and [4] keys.			76	

Service mode function	Submode No.	Function mode No.		
Specify a password for entering the Service mode, within a range from 0000 to 9999. The default setting is "0000." Specify a password for selecting songs with priority, within a range from 0000 to 9999. The default setting is "0000." How to set Input a 4-digit value using the numeric keys. To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking and remains lit.	C6: FIX ON OTHER DATA	6	11 12	PASS-WORD
Specifies the number of songs of a disc that are to be played continuously. This function does not work if songs are not selected from other discs. The default setting is "2." How to set Input a value within a range from 2 to 10. If you input incorrect data, the system beeps twice and returns to the previous display. To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking and remains lit.			20	SAME DISC CONTINU-OUS PLAY
Specifies the sound volume for the B.G.M. mode on six levels. How to set Input a value from 0 to 5 (see the table below). As is shown below, the larger the value, the smaller the sound volume will be. Value / State 0 Normal 1 Decrease the sound volume by 4 dB. 2 Decrease the sound volume by 8 dB. 3 Decrease the sound volume by 12 dB. 4 Decrease the sound volume by 16 dB. 5 Decrease the sound volume by 20 dB.			30	B.G.M. VOLUME
The inputting of the ID number consists of four display levels. 1. Location number (first three digits) 2. Location number (last three digits) 3. Serial number (first two digits) 4. Serial number (last three digits) The default setting is 000000-00000. How to set Input the required value in blinking digits. To specify data, press the BEST HITS key. The system beeps once, and the display stops blinking but remains lit. To delete an incorrect input, press the CLEAR key. To specify other data, go to the next display using the ROTATE MENU and [6] keys, and perform the same procedure. To return to the previous display, use the ROTATE MENU and [4] keys.			40	ID NUMBER
Selects the front panel indicating the charges. Two panels are available for selection. How to set Input either 0 or 1. 0 ··· The panel indicating $1, $2, and $5. 1 ··· The panel indicating $0.25, $1, and $5. Default is "0."			50	FRONT PANEL SELECTION

Service mode function	Submode No.	Function mode No.		
Deletes all data of PLAYBACK AUDIT 1 to 3 (1-11 to 1-38).	C7: CLEAR DATA	7	11	AUDITS (counting after previous reset)
Deletes all data of CASH AUDIT (1-40 to 1-49).			12	
Deletes all data relating to the disc.			20	DISC INFORMATION
Deletes song selection.			30	SELECTION INFORMATION
Deletes the number of times errors have been recorded.			40	ERROR HISTORY
Deletes data of the charge for a single song.			50	CREDIT
Deletes LOCK OUT songs.			61	SPECIAL NUMBER
Deletes PRIORITY songs.			62	
Deletes PREMIUM songs.			63	
Deletes HIT MAKER songs.			64	
Deletes BGM disc.			65	
Deletes all the data of 7-11, 7-12, 20 and 30 at the same time.			70	FOR OPERATOR
Deletes all the data of 7-40 and 7-20 at the same time. How to set "CL." lights in the upper two digits, and the item to be deleted (Function mode) blinks in the last two digits. To specify data, press the BEST HITS key. The system beeps once, the display stops blinking, but remains lit to indicate that the data has been deleted.			80	FOR REPAIR MAN

Service mode function	Submode No.	Function mode No.		
Specifies how many times the aging cycle should be repeated. How to set " " lights in the upper two digits. Input a number from 1 to 99 into the last two digits. To specify data, press the BEST HITS key. The system beeps once, the display stops blinking and remains lit.	C8: AGING	8	10	AGING CYCLE TIME
Plays back 30 seconds of the first song on each of the total number of discs.			20	AGING (A)
Plays back 30 seconds of the first and the last songs on each of the total number of discs.			30	AGING (B)
Plays back all songs of all discs. How to set In this mode, either "AP-A," "AP-B" or "AP-C" blinks during standby. Aging will start by pressing the BEST HIT key and closing the MAIN UNIT DOOR. During aging, the display alternately shows the song number being played back and either "AP-A," "AP-B" or "AP-C." Aging will be interrupted, and the system returns to the standby mode by pressing the CLEAR key during the aging mode.			40	AGING (C)

Service mode function	Submode No.	Function mode No.		
Lights up all LEDs of the OPERATION SECTION (except illuminations).	C9: TEST	9	10	L.E.D. ALL LIGHTING
Reads and displays the data of the switches on the commander.			20	FUNCTION SW. READING
Checks if all LEDs of OPERATION SECTION (except illuminations) light properly.			30	L.E.D. LIGHTING CHECK

CLEAR key

With the submodes 4, 5 and 6 for setting data and the mode 2-60 (PLAY TIME BY MANUAL), input data can be deleted before the final setting (press the BEST HIT key) by pressing the CLEAR key.
The submodes 4-10, 5-10, 20, 30 and 40 related to the schedule, and the mode 4-70 (CREDIT RATE), are different.
Data structure of these modes is as follows:

Data	Pattern 1
	Pattern 2
	Pattern 3
	Pattern 4

For example, assume that the above is the set data of HAPPY HOUR, and you want to delete the second data (Pattern 2). First, display Pattern 2 and press the CLEAR key. Data of Pattern 2 will then be deleted, and the subsequent Patterns will move up as follows:

Data	Pattern 1
	Pattern 3
	Pattern 4
	Pattern 5

ERROR CODE

Item	Error code	Option	Description
CASH	00	——	Trouble with coin channnel 1 acceptance*
	01	——	Trouble with coin channnel 2 acceptance*
	02	——	Trouble with coin channnel 3 acceptance*
	03	——	Trouble with coin channnel 4 acceptance*
	04	——	Trouble with coin channnel 5 acceptance*
	05	——	Trouble with coin channnel 6 acceptance*
	06	——	Trouble with $1 bill acceptance*
	07	——	Trouble with $5 bill acceptance*
PLAYER	20	Player number	Command break
	21	Disc number	Search timeout
	22	Disc number	Defocus
	23	Disc number	No disc
	24	Disc number	Trouble with setup
	25	Disc number	Impossible to return
	26	Disc number	Trouble with disc select
	27	Disc number	The select mechanism cannot return
COMMU-NICATION with CDP	40	Player number	Disabled communication
	41	Player number	Unknown code returned from the player.
	42	Player number	The player did not recognize the command.
	43	——	Undefined DRT line
	60	——	Undefined FUNCTION switch
	80	——	The menu did not rotate within 10 seconds.

* Input time of signal (bill) is too long.

Other

- Error code 00 - 99 Up to 100 codes
- Option number

CD player number:
11 ~ 36 for the first CD player
41 ~ 66 for the second CD player
71 ~ 96 for the third CD player

Disc number: the upper two digits when entered.
(Examples)
96: the lowest disc in the third CD player
11: the uppermost disc in the first CD player

Data can be uploaded/downloaded by using a personal computer. See "Data Retrieval" for more details.

AFTER SETTING OF THE SERVICE MODE

After setting of the Service mode is completed, confirm that the system operates correctly. Perform the following operations after TOC initialization:

1. Set the HIGH POWER VOLUME and LOW POWER VOLUME knobs to the MIN side.
2. Press the VOLUME (+) key of the remote control unit to set to −00 dB.
3. Put coins or bills.
   - Check coins/bills.
4. Select songs after the TOC initialization.
   - Check the song selection function.
5. Adjust the VOLUME knob to the maximum sound level within the range of use.
6. Adjust tone by using the TONE CONTROL knob.
7. Check that the menu is correctly set for the disc. Confirm the data by using the data operated for checking.
8. Clear the data to delete the checking data.
   - See "C6" of the Service mode.
9. Close the door.

HOW TO RETRIVE DATA

1. Interface

An asynchronous serial format is employed as the communication interface. The details are as follows.

1-1. Format

1-1-1. Connector Pins

Pins are 9-pin D-SUB. The pin functions are explained below.

Pin No.	Name	Function	Signal Level
1	GND	Signal ground	
2	TXD	Transmitted data	RS-232C
3	RXD	Received data	RS-232C
4	DTR	Data terminal ready	RS-232C
5	CTS	Clear to send	RS-232C
6	RTS	Request to send	RS-232C
7	GND	Frame ground	
8	DSR	Data set ready	RS-232C
9	N.C.	Not connected	RS-232C

1-1-2. Signal Level

The signal level conforms to RS-232C standards.

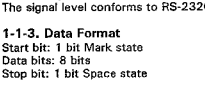
1-1-3. Data Format

Start bit: 1 bit Mark state
Data bits: 8 bits
Stop bit: 1 bit Space state

1-1-4. Transmission Speed

Can select either 2400 bps or 1200 bps by "BAUD RATE: 7" of the FUNCTION switch on the commander inside the MAIN UNIT DOOR.

1-2. Communications Protocol



The basic procedure takes the form of first transmitting a command from the computer to the CJ-V99/CJ-V77. A response to this command is then transmitted from the CJ-V99/CJ-V77 to the computer in the proper form.
The CJ-V99/CJ-V77 is ready to be accessed by the computer if the menu door is open and the player is completely stopped. However, commands for transmitting data cannot be unconditionally processed. First, the password is checked and the next command is processed in accordance with the result. An error code is returned if the password is incorrect. Then, an error code is returned to summarize processing for the next command.
To terminate transmission, input the password again. Data can be released or closed by inputting the password.

2. Command and Exchanges

The ASCII codes are the characters used for communication. The command characters stand for the letters of the alphabet and allow distinction between uppercase and lowercase letters. Prefixed numeric characters define arguments, and suffixed numeric characters define data. Commands must be accompanied arguments. Data may be accompanied or not accompanied by commands.
A command and an argument, or a command and data must not have a space or other additional character codes inserted between them.
The CR (ODh) code is used as the character terminator. This code must always be inserted at the end of a string of command characters. The CJ-V99/CJ-V77 does not interpret any of the codes input before this character terminator, and the codes are not transmitted no matter how many are input. Additionally, input of the character terminator code only will result in no codes being transmitted. The command buffer can hold up to 200 characters. However, commands must be input one type at a time. If different types of commands are entered in succession, only the first command will be recognized, and the other commands will be ignored. Additionally, if a command accompanies a data code at this point, error processing will result from the continuation of commands because alphabetic characters exist in an area reserved for numeric characters.
The completion code and the error code are provided as status codes for commands. The completion code is :(3Ah). This code is transmitted when the last instruction has been completed. The error code is Exx (xx denotes a two-digit number), and the error type is indicated by the numeric value of "xx". CR (ODh) is also used for the character terminator of the status.

2-1. Commands

The commands consist of the following four types.
1. Input command I
2. Request command R
3. Clear command C
4. Set command S

Format:
argument I data CR·····See note 1.
argument RCR
argument CCR
argument S data CR

Note 1:
CR denotes the carriage return code (ODh).
Argument:
The object of the command is specified by the argument. Arguments include the numbers 1 through 128. However, the upper limit of arguments for commands is less than 128. There are not 128 commands at the present time. The numbers through 128 are provided for future additions.
Data:
Data consists of values to be input or set in accordance with a command. All data codes are numbers.

2-1-1. Input Command I

The input command is used to input data to the CJ-V99/CJ-V77. This data is referenced by the CJ-V99/CJ-V77 without affecting the internal data of the CJ-V99/CJ-V77. This point distinguishes the input command from the set command, which is described later.

Argument	Function
1	Password check

Currently there is only one type of argument provided for input commands.

(1) Password check

Format: 1IxxxxCR

Input the password ("xxxx") using the format shown above. A password may be any number from 0000 to 9999. The password is then checked, and :(3Ah) immediately followed by CR is transmitted if the password is correct. Error code "E11CR" is transmitted if the password is incorrect. If the password is incorrect and other commands are then input, these commands will not be accepted and the "E10" error code will be transmitted. If the correct password is not entered by the third try, any other command, including password check, will cause the "E10" error code to be transmitted. The power of the unit must then be switched off and the password check procedure must be repeated from the beginning.
Input the password both at the beginning and termination of the password check, to complete the procedure.

2-1-2. Request Command R

The request command is used to determine the types of data stored in the CJ-V99/CJ-V77 or the status of the CJ-V99/CJ-V77. This command is not accompanied by a data code.

Argument	Function
1	Non-resettable playback audits reference
2	Non-resettable cash audits reference
3	Resettable playback audits reference
4	Resettable cash audits reference
5	Most popular song data reference
6	Most popular disc data reference
7	Error history reference
8	Number of times of cancellation by track skips data reference
9	ID No. reference
10	ROM version reference
11	Coin weight settings reference
12	Credit rates reference
13	Number of times of cancellation by track skips reference
14	Auto-play interval time setting reference
15	Function switches reference
16	Door open/close history reference
17	Power ON/OFF history reference
18	Number of songs selected in time band data reference
19	Number of times each song selected data reference
20	Total number of discs data reference

Argument	Function
21	Priority songs reference
22	LOCK OUT songs and schedule reference
23	PREMIUM songs reference
24	HIT MAKER songs reference
25	BGM disc reference
26	HAPPY HOUR schedule reference
27	AUTO PLAY schedule reference
28	FREE PLAY schedule reference
29	AUTO PLAY conditions reference
30	SAME DISC CONTINUOUS PLAY reference
31	Playback time limit reference
32	PREMIUM CREDIT RATE reference
33	BGM VOLUME reference
34	Selection password reference
35	Menu auto rotation intervals reference
36	Modem schedule reference

(1) Non-resettable playback audits

Format: 1RCR

The following data is contained in non-resettable playback audits.

① Number of songs selected using free-of-charge playback
② Number of songs selected using paid playback
③ Number of songs selected using normal song select
④ Number of songs selected using most popular song select
⑤ Number of songs selected using album song select
⑥ Number of PRIORITY songs selected using PAID PLAY.
⑦ Number of PREMIUM songs selected using PAID PLAY.
⑧ Number of HIT MAKER songs selected in PAID PLAY.
⑨ Number of HAPPY HOUR songs selected in PAID PLAY.
⑩ Number of songs repeated in PAID PLAY.

The data for an item is transmitted each time this command is input (transmission sequence is ① through ⑩). Each data item may have a maximum of ten digits, and can range from 0 through 4,294,967,295. The command must be input again to obtain the data for the next item because each data item is transmitted accompanied with a CR. Repeat this operation until :(3Ah) is transmitted with the data.

Example:

1RCR	123CR	Data item ①
1RCR	1CR	Data item ②
|	|	|
|	|	|
1RCR	456:CR	Data item ⑩

(2) Non-resettable cash audits

Format: 2RCR

The following data is contained in non-resettable cash audits.
① Total cash
② Total (coin channel 1)
③ Total (coin channel 2)
④ Total (coin channel 3)
⑤ Total (coin channel 4)
⑥ Total (coin channel 5)
⑦ Total (coin channel 6)
⑧ Total 1 $ bills
⑨ Total 5 $ bills
⑩ Total credits

The data for an item is transmitted each time this command is input (transmission sequence is ① through ⑩). Each data item may have a maximum of ten digits, and can range from 0 through 4,294,967,295. The command must be input again to obtain the data for the next item because each data item is transmitted accompanied with a CR. Repeat this operation until :(3Ah) is transmitted with the data.

Example:

2RCR	123CR	Data item ①
2RCR	1CR	Data item ②
⋮	⋮	⋮
2RCR	456:CR	Data item ⑩

(3) Resettable playback audits

Format: 3RCR

The following data is contained in resettable playback audits.
① Number of songs selected using free-of-charge playback
② Number of songs selected using paid playback
③ Number of songs selected using normal song select
④ Number of songs selected using most popular song select
⑤ Number of songs selected using album song select
⑥ Number of PRIORITY songs selected using PAID PLAY.
⑦ Number of PREMIUM songs selected using PAID PLAY.
⑧ Number of HIT MAKER songs selected in PAID PLAY.
⑨ Number of HAPPY HOUR songs selected in PAID PLAY.
⑩ Number of songs repeated in PAID PLAY.
⑪ The total number of times that the three CD Changers were activated by a song selection.
⑫ The number of times that the CD Changer 1 was activated by a song selection.
⑬ The number of times that the CD Changer 2 was activated by a song selection.
⑭ The number of times that the CD Changer 3 was activated by a song selection.
⑮ The total number of times that the three CD Changers were operated.
⑯ The number of times that the CD Changer 1 was operated.
⑰ The number of times that the CD Changer 2 was operated.
⑱ The number of times that the CD Changer 3 was operated.

The data for an item is transmitted each time this command is input (transmission sequence is ① through ⑱). Each data item may have a maximum of ten digits, and can range from 0 through 4,294,967,295. The command must be input again to obtain the data for the next item because each data item is transmitted accompanied with a CR. Repeat this operation until :(3Ah) is transmitted with the data.

Example:

3RCR	123CR	Data item ①
3RCR	1CR	Data item ②
⋮	⋮	⋮
3RCR	456:CR	Data item ⑱

(4) Resettable cash audits

Format: 4RCR

The following data is contained in resettable cash audits.
① Total cash
② Total (coin channel 1)
③ Total (coin channel 2)
④ Total (coin channel 3)
⑤ Total (coin channel 4)
⑥ Total (coin channel 5)
⑦ Total (coin channel 6)
⑧ Total 1 $ bills
⑨ Total 5 $ bills
⑩ Total credits

The data for an item is transmitted each time this command is input (transmission sequence is ① through ⑩). Each data item may have a maximum of ten digits, and can range from 0 through 4,294,967,295. The command must be input again to obtain the data for the next item because each data item is transmitted accompanied with a CR. Repeat this operation until :(3Ah) is transmitted with the data.

Example:

4RCR	123CR	Data item ①
4RCR	1CR	Data item ②
⋮	⋮	⋮
4RCR	456:CR	Data item ⑩

(5) Most popular song data

Format: 5RCR

Most popular song data includes data on the top 20 songs. The data for a top 20 hit song is transmitted each time this command is input (transmission sequence is No. 1 through No. 20). Therefore, the command must be input 20 times to obtain the data for the top 20 songs (until ":" (3Ah) is transmitted with the data).
The song number is indicated by the first four digits from the left. The number of times the song was selected is indicated by the following digits. The number of times the song was selected has a maximum of five digits, and can range from 0 through 65,535. Therefore, the data for a song consists of a minimum of five digits, and a maximum of nine digits.

Example:

5RCR	11011000CR	No. 1
5RCR	2210800CR	No. 2
5RCR	430610:CR	No. 20

There are 20 songs in this example, and the top song is song number 1101, which was selected 1,000 times. The 20th hit song is song number 4306, which was selected 10 times.

(6) Disc hit data

Format: 6RCR

Disc hit data includes data for a maximum of 54 discs. The data for a disc is transmitted each time this command is input (transmission sequence is No. 1 through No. 54). Therefore, the command must be input a maximum of 54 times to obtain the data for 54 discs (until ":" (3Ah) is transmitted with the data). However, only data for the number of discs actually loaded is transmitted.
The disc number is indicated by the first two digits from the left. The number of times the disc was selected is indicated by the following digits. The number of times the disc was selected has a maximum of five digits, and can range from 0 through 65,535. Therefore, the data for a disc consists of a minimum of three digits, and a maximum of seven digits.

Example:

6RCR	111000CR	No. 1
6RCR	22800CR	No. 2
6RCR	4310:CR	No. 54

There are 54 discs in this example, and the top disc is disc number 11, which was selected 1,000 times. The 54th disc is disc number 43, which was selected 10 times.

(7) Error history data

Format: 7RCR

Error history data includes data for a maximum of the twenty latest errors. The latest data for an error is transmitted each time this command is input (transmission sequence is error No. 1 through No. 20). Therefore, the command must be input a maximum of twenty times to obtain the data for the latest twenty errors (until ":" (3Ah) is transmitted with the data). However, only data for the number of errors actually recorded is transmitted.
The error code is indicated by the first two digits from the left. The two digits on the right show the option code for the error. The subsequent four digits represent the date when the error occurred. Whether an option code affixes will depend on the error code. If no option code affixes, only the error code and the date in six digits will be transmitted.

Refer to the error code table for the "How to use Service Mode" in the operating instructions.

Example:

7RCR	40010907CR	No. 1
7RCR	25020901CR	No. 2
7RCR	000801:CR	No. 10

There are ten errors in this example, and the latest error is error code 40, option 01. This code and option means that operation of player no. 1 was unreliable. The error occurred on September 7. The tenth previous error had an error code of "00". This indicates that there was a problem in the coin slot. The error occurred on August 1.

(8) Number of times of cancellation by track skips data

Format: 8RCR

Number of times of cancellation by track skips data includes data for a maximum of 54 discs. The data for a disc is transmitted each time this command is input (transmission sequence is most often cancelled disc through least often cancelled disc). Therefore, the command must be input a maximum of 54 times to obtain the data for 54 discs (until ":" (3Ah) is transmitted with the data). However, only the number of discs actually cancelled by track skip is transmitted.
The disc number is indicated by the first two digits from the left. The number of times the disc was cancelled is indicated by the following digits. The number of times the disc was cancelled has a maximum of three digits, and can range from 0 through 255. Therefore, the data for a disc consists of a minimum of three digits, and a maximum of five digits.

Example:

8RCR	1110CR	No. 1
8RCR	218CR	No. 2
|	|	|
|	|	|
8RCR	432:CR	No. 5

There were five discs cancelled in this example, and the disc most often cancelled was disc no. 11, which was cancelled ten times. The fifth most cancelled disc was disc no. 43, which was cancelled twice.

(9) ID No.

Format: 9RCR

The 11-digit ID No. is transmitted.

Example:
9RCR 12345678912:CR

The currently registered ID No. is 12345678912.

(10) ROM version

Format: 10RCR

The software version stored in ROM is transmitted as a 2-digit number.

Example:
10RCR 11:CR

The version loaded in ROM is 1.1.

(11) Coin weight settings

Format: 11RCR

The amount of the standard coin is indicated in three digits in units of cents. After this, set data for the six types of coins will be transmitted in 18 digits (3 digits each) in the sequence of CH1 coin, CH2 coin, CH3 coin, CH4 coin, Ch5 coin and Ch6 coin. Each set value is indicated in a multiple of an integer of the standard amount. An indication of "000" means that the channel is not used.

Example:
11RCR 025004020000001000000:CR

In the above example, the standard amount is 25 cents. CH1 is set to $1, CH2 to $5, Ch3 is not used, Ch4 is set to 25 cents, and CH5 and CH6 are not used.

(12) Credit rates

Format: 12RCR

The amount is indicated in three digits. The number of credits to the amount is indicated in two digits for five patterns, thus 25 digits in total. The first digit of the amount represents the dollar amount and the last two digits represent cents. An item for which no data is set will not be indicated.

Example:
12RCR 100032000750018 :CR

In the above example, three patterns are set: $1 for 3 credits, $2 for 7 credits, and $5 for 18 credits.

(13) Number of times of cancellation by track skips

Format: 13RCR

The set skip counts and the counts until skipping is disabled by cancellation are transmitted in a 4-digit number.

Example:
13RCR 1002:CR

In the above example, the skip counts until cancellation is set to 10, and the number of cancellation times is set to 2.

(14) Auto-play interval time

Format: 14RCR

The setting for auto-play interval time is transmitted as a 2-digit number.

Example:
14RCR 10:CR

The auto-play interval time is set at 10 minutes in this example.

(15) Function switches

Format: 15RCR

The function switch settings are transmitted (transmission sequence is function switch no. 1 through no. 8). Zero ("0") indicates that the switch is OFF, while "1" indicates that the switch is ON.

Example:
15RCR 01100100:CR

In the above example, the FUNCTION switches are set to PAID PLAY, minimum playback, SAME DISC CONTINUOUS PLAY disabled, album selection disabled, AUTO PLAY disabled, BEST HITS AUTO PLAY, and 2400 bps for the RS-232C communications rate.

(16) Door open/close history

Format: 16RCR

The CJ-V99/CJ-V77 maintains a record of the last 32 times the door was opened and closed. A 20-digit number is transmitted each time this command is input (transmission sequence is year, month, day, hour, and minute for door opening, followed by year, month, day, hour, and minute for door closing). The year, month, day, hour, and minute are indicated in 2-digit increments. All data is sent by repeating this command until the :(3Ah) code is transmitted with the data.

Example:

16RCR	90091510009009151020
	:CR

This example indicates that the door was opened at 10:00 a.m. on September 15, 1990, and closed at 10:20 a.m. on September 15, 1990.

(17) Power ON/OFF history

Format: 17RCR

The CJ-V99/CJ-V77 maintains a record of the last 32 times power was switched ON and OFF. A 20-digit number is transmitted each time this command is input (transmission sequence is year, month, day, hour, and minute for power ON, followed by year, month, day, hour, and minute for power OFF). The year, month, day, hour, and minute are indicated in 2-digit increments. All data is sent by repeating this command until the :(3Ah) code is transmitted with the data.

Example:

17RCR	90091510009009152220
	CR
17RCR	90091610109009170010
	CR
⋮	⋮
17RCR	90101509509010152340
	:CR

This example indicates that the power was first switched ON at 10:00 a.m. on September 15, 1990, and switched OFF at 10:20 p.m. on September 15, 1990. Power was last switched ON at 9:50 a.m. on October 15, 1990, and switched OFF at 11:40 p.m. on October 15, 1990.
The power ON/OFF history also records momentary power outages.

(18) Number of songs selected in time band data

Format: 18RCR

The CJ-V99/CJ-V77 maintains a record of the number of songs selected in each hourly time band for the last 32 days. A 78-digit number is transmitted each time this command is input (transmission sequence is year, month, and day in two-digit increments, followed by the number of songs selected each hour, in three-digit increments). The number of songs selected in each time band is fixed at three digits, and can range from 000 through 255. The time bands are transmitted in the sequence of 0:00 a.m. through 11:00 p.m. All data is sent by repeating this command until the :(3Ah) code is transmitted with the data.

Example:

18RCR	901001000000000000
	000000000000000000
	010011012013014015
	016017018019020021
	022023CR
⋮	⋮
18RCR	901030000000000000
	000000000000000000
	011012013014015016
	011012013014015016
	011012:CR

This example indicates the number of songs selected in each hourly time band for the days October 1 through October 30, 1990. The distribution of songs selected by hourly time band for October 1, 1990 and October 30, 1990 is shown in the following table.

October 1, 1990 No. of Songs Selected	Time Band	October 30, 1990 No. of Songs Selected
0	0:00 a.m. - 9:59 a.m.	0
10	10:00 a.m. - 10:59 a.m.	11
11	11:00 a.m. - 11:59 a.m.	12
12	12:00 p.m. - 12:59 p.m.	13
13	1:00 p.m. - 1:59 p.m.	14
14	2:00 p.m. - 2:59 p.m.	15
15	3:00 p.m. - 3:59 p.m.	16
16	4:00 p.m. - 4:59 p.m.	11
17	5:00 p.m. - 5:59 p.m.	12
18	6:00 p.m. - 6:59 p.m.	13
19	7:00 p.m. - 7:59 p.m.	14
20	8:00 p.m. - 8:59 p.m.	15
21	9:00 p.m. - 9:59 p.m.	16
22	10:00 p.m. - 10:59 p.m.	11
23	11:00 p.m. - 11:59 p.m.	12

(19) Number of times each song was selected data

Format: 19RCR

The number of times each song was selected is transmitted. The number of times that songs were selected is transmitted each time this command is input (transmission sequence is lowest song number to highest song number beginning with disc no. 1 of changer 1). The song number is indicated by the first four digits from the left. The number of times the song was selected is represented by the following digits (maximum of five digits). The song number and the number of times that it was selected can total a maximum of 9 digits. The number of times a song was selected can range from 0 through 65,535. All data is sent by repeating this command until the :(3Ah) code is transmitted with the data.

Example:

```
19RCR          110110CR
19RCR          11021CR
  |              |
  |              |
19RCR          961520:CR
```

This example indicates that song number 1101 was selected ten times, song number 1102 was selected once, and song number 9615 was selected 20 times.

(20) Total number of discs

Format: 20RCR

The number of discs loaded in the CJ-V99/CJ-V77 is transmitted. The number of discs can range from 0 through 54.

Example 1: 20RCR 5:CR
Example 2: 20RCR 18:CR

Five discs are loaded in the CJ-V99/CJ-V77 in example 1, while 18 discs are loaded in example 2.

(21) Priority songs

Format: 21RCR

The songs currently set as priority songs are transmitted. Four-digit song selection numbers for as many as twenty-five songs can be transmitted. Therefore, a 100-digit number is the largest number that is transmitted.

Example:

```
21RCR          11011203220455019612
               32114610321011028101
               :CR
```

Song numbers 1101, 1203, 2204, 5501, 9612, 3211, 4610, 3210, 1102, and 8101 are set as the ten priority songs in this example.

(22) Lockout songs

Format: 22RCR

The songs currently set as lockout songs are transmitted. Four-digit song selection numbers for as many as ten songs can be transmitted. Therefore, a 14-digit number is the largest number that is transmitted. If no schedule is input, only the song number in 4 digits will be transmitted. The 10-digit schedule consists of: the starting day in the first digit followed by four digits showing the starting time; the next digit represents the ending day followed by four digits showing the ending time. Data can be set for a maximum of 25 songs.

Example:

```
22RCR          11011100011200CR
               12031100011200:CR
```

In the above example, song numbers 1101 and 1203 are disabled from Monday 10:00 until 12:00.

(23) PREMIUM songs

Format: 21RCR

Transmits currently set PREMIUM songs. A song number consists of four digits, and a maximum of 25 songs can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:

```
23RCR          11011203220455019612
               32114610321011028101
               :CR
```

In the above example, song numbers 1101, 1203, 2204, 5501, 9612, 3211, 4610, 3210, 1102 and 8101 (10 songs) are set as PREMIUM songs.

(24) HIT MAKER songs

Format: 24RCR

Transmits currently set HIT MAKER songs. A song number consists of four digits, and a maximum of 25 songs can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:

```
24RCR          11011203220455019612
               32114610321011028101
               :CR
```

In the above example, song numbers 1101, 1203, 2204, 5501, 9612, 3211, 4610, 3210, 1102 and 8101 (10 songs) are set as HIT MAKER songs.

(25) BGM discs

Format: 25RCR

Transmits currently set BGM discs. A disc number consists of two digits, and a maximum of 54 discs can be sent. Consequently, a maximum of 108 digits may be transmitted.

Example:

```
25RCR          111213141516:CR
```

In the above example, six disc numbers 11, 12, 13, 14, 15 and 16 (i.e. the first magazine of CD Changer 1) are set as BGM discs.

(26) HAPPY HOUR schedule

Format: 26RCR

Transmits the currently set HAPPY HOUR schedule. A schedule consists of 10 digits, and a maximum of 10 patterns can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:

```
26RCR       1100011200
            2100021200
            3100031200:CR
```

In the above example, three patterns are set: Monday 10:00 to 12:00, Tuesday 10:00 to 12:00, and Wednesday 10:00 to 12:00.

(27) AUTO PLAY schedule

Format: 27RCR

Transmits the currently set AUTO PLAY schedule. A schedule consists of 10 digits, and a maximum of 10 patterns can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:

```
27RCR       1100011200
            2100021200
            3100031200:CR
```

In the above example, three patterns are set: Monday 10:00 to 12:00, Tuesday 10:00 to 12:00, and Wednesday 10:00 to 12:00.

(28) FREE PLAY schedule

Format: 28RCR

Transmits the currently set FREE PLAY schedule. A schedule consists of 10 digits, and a maximum of 10 patterns can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:

```
28RCR       1100011200
            2100021200
            3100031200:CR
```

In the above example, three patterns are set: Monday 10:00 to 12:00, Tuesday 10:00 to 12:00, and Wednesday 10:00 to 12:00.

(29) AUTO PLAY conditions

Format: 29RCR

Transmits the currently set conditions for AUTO PLAY. The first two digits show the number of BEST HITS song to be eliminated from RANDOM AUTO PLAY. The subsequent four digits show the ranking of the BEST HITS song to be selected for BEST HIT AUTO PLAY.

Example:

```
29RCR       200620:CR
```

In the above example, songs from 1st to 20th are eliminated from the BEST HITS playback, and songs from 6th to 20th are selected for the BEST HITS AUTO PLAY.

(30) SAME DISC CONTINUOUS PLAY disabled

Format: 30RCR

Transmits the currently set number of disabled songs for SAME DISC CONTINUOUS PLAY. The value is expressed in two digits.

Example:

```
30RCR       05:CR
```

In the above example, five songs are disabled.

(31) Playback time limit

Format: 31RCR

Transmits the currently set time for playback limit, expressed in two digits.

Example:

```
31 RCR      03:CR
```

In the above example, the playback limit is 3 minutes.

(32) PREMIUM CREDIT RATE

Format: 32RCR

Transmits the currently set PREMIUM CREDIT RATE, expressed in two digits.

Example:

```
32RCR       03:CR
```

In the above example, the rate is three times that of normal playback.

(33) BGM VOLUME

Format: 33RCR

Transmits the currently set preset value for the sound volume during BGM disc playback. The value is expressed in two digits.

Example:

```
33RCR       03:CR
```

In the above example, the volume level is set to 3.
Level 0: Normal
Level 1: −4 dB
Level 2: −8 dB
Level 3: −12 dB
Level 4: −16 dB
Level 5: −20 dB

(34) Song selection password

Format: 34RCR

Transmits the currently set 4-digit password to be used when selecting songs.

Example:
34RCR 0101:CR

In the above example, the registered password is 0101.

(35) MENU INTERVAL TIME

Format: 35RCR

Transmits the currently set interval time for automatic menu rotation. The value is expressed in two digits (in units of minutes).

Example:
35RCR 02:CR

In the above example, the interval time is set to 2 minutes.

(36) Modem communication schedule

Format: 36RCR

Transmits the currently set modem communications schedule. A single schedule consists of 10 digits, and a maximum of 10 patterns can be sent. Consequently, a maximum of 100 digits may be transmitted.

Example:
36RCR 1100011200
2100021200
3100031200:CR

In the above example, three patterns are set: Monday 10:00 to 12:00, Tuesday 10:00 to 12:00, and Wednesday 10:00 to 12:00.

2-1-3. Clear Command C

The clear command is used to clear data stored or values set in the CJ-V99/CJ-V77. This command is not accompanied by a data code.

Argument	Function
1	All memory clear
2	Playback audits clear
3	Cash audits clear
4	Disc-related data clear
5	Error history clear
6	Credits clear
7	Selected song reservation clear
8	Door open/close history clear
9	Power ON/OFF history clear
10	Number of songs selected in time band data clear
11	Priority songs clear
12	Lockout songs clear
13	PREMIUM songs clear
14	HIT MAKER songs clear
15	BGM discs clear
16	HAPPY HOUR schedule clear
17	AUTO PLAY schedule clear
18	FREE PLAY schedule clear
19	User display clear
20	Modem communications schedule clear

(1) All memory clear

Format: 1CCR

This argument clears the same range of memory as the TOC INITIALIZE key does in the Service Mode.

Example:
1CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(2) Playback audits

Format: 2CCR

This argument clears the area for resettable playback audits. The contents of resettable playback audits are cleared to "0" (see section 2-1-2, part (3) for details).

Example:
2CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(3) Cash audits

Format: 3CCR

This argument clears the area for resettable cash audits. The contents of resettable cash audits are cleared to "0" (see section 2-1-2, part (4) for details).

Example:
3CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(4) Disc-related data

Format: 4CCR

This argument clears most popular song data, most popular disc data, number of times of cancellation by track skips data, number of times each song selected data, and total number of discs data to "0" (see section 2-1-2, parts (5), (6), (8), (19) and (20) for details).

Example:
4CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(5) Error history

Format: 5CCR

This argument clears the error history (see section 2-1-2, part (7) for details).

Example:
5CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(6) Credits

Format: 6CCR

This argument clears the credits, which are issued when coins are inserted, to "0".

Example:
6CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(7) Selected song reservation

Format: 7CCR

This argument clears the reservation of songs selected.

Example:
7CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(8) Door open/close history

Format: 8CCR

This argument clears the door open/close history (see section 2-1-2, part (16) for details).

Example:
8CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(9) Power ON/OFF history

Format: 9CCR

This argument clears the power ON/OFF history (see section 2-1-2, part (17) for details).

Example:
9CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(10) Number of songs selected in time band data

Format: 10CCR

This argument clears the number of songs selected in time band data (see section 2-1-2, part (18) for details).

Example:
10CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(11) Priority songs

Format: 11CCR

This argument clears the priority songs (see section 2-1-2, part (21) for details).

Example:
11CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(12) Lockout songs

Format: 12CCR

This argument clears the lockout songs (see section 2-1-2, part (22) for details).

Example:
12CCR :CR

Transmission of the :(3Ah) code signifies that the clear operation is complete.

(13) PREMIUM songs

Format: 13CCR

Clears the PREMIUM songs described in 2-1-2 (23).

Example:
13CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(14) HIT MAKER songs

Format: 14CCR

Clears the HIT MAKER songs described in 2-1-2 (24).

Example:
14CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(15) BGM discs

Format: 15CCR

Clears the BGM discs described in 2-1-2 (25).

Example:
15CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(16) HAPPY HOUR schedule

Format: 16CCR

Clears the HAPPY HOUR schedule described in 2-1-2 (26).

Example:
16CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(17) AUTO PLAY schedule

Format: 17CCR

Clears the AUTO PLAY schedule described in 2-1-2 (27).

Example
17CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(18) FREE PLAY schedule

Format: 18CCR

Clears the FREE PLAY schedule described in 2-1-2 (28).

Example:
18CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(19) User display

Format: 19CCR

Clears the user display described in 2-1-4 (22).

Example:
19CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

(20) Modem communications schedule

Format: 20CCR

Clears the user display described in 2-1-2 (36).

Example:
20CCR :CR

Informs that data clearance is completed by transmitting the :(3Ah) code.

2-1-4. Set Command S

The set command is used to set the data and setting values required for operation of the CJ-V99/CJ-V77. This command is accompanied by data. The number of digits for settings varies according to the command.

Argument	Function
1	Coin weight settings
2	Credit rates
3	Number of times of cancellation by track skips
4	Auto-play interval time setting
5	Password setting
6	ID No. setting
7	Priority songs
8	Lockout songs and schedule
9	PREMIUM songs setting
10	HIT MAKER songs setting
11	BGM discs setting
12	HAPPY HOUR schedule setting
13	AUTO PLAY schedule setting
14	FREE PLAY schedule setting
15	AUTO PLAY conditions setting
16	SAME DISC CONTINUOUS PLAY disabled setting
17	Playback time limit setting
18	PREMIUM CREDIT RATE setting
19	BGM VOLUME setting
20	Song selection password setting
21	Automatic menu rotation interval time setting
22	User display setting
23	Modem communications schedule setting

(1) Coin weight settings

Format: 1Sxxxx·····xxxCR

The standard coin amount is indicated in three digits in units of cents. After this, specify data for the six types of coins in 18 digits (3 digits each) in the sequence of CH1 coin, CH2 coin, CH3 coin, CH4 coin, Ch5 coin and Ch6 coin. Each set value is indicated in a multiple of an integer of the standard amount. An indication of "000" means that the channel is not used. Select a standard amount from 25 cents, 50 cents, 75 cents, 1 dollar, 2 dollars, 3 dollars, 4 dollars and 5 dollars.

Example:
1S025004020000001000000CR :CR

In the above example, the standard amount is 25 cents. CH1 is set to $1, CH2 to $5, Ch3 is not used, Ch4 is set to 25 cents, and CH5 and CH6 are not used.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(2) Credit rates

Format: 2Sxxxxx ..... xxxxxCR

The amount is indicated in three digits. The number of credits to the amount is indicated in two digits for five patterns, thus 25 digits in total. The first digit of the amount represents dollar(s) and the latter two digits represents cents. Data should be specified either in dollar(s) or cents. For example, a setting of 1 dollar and 25 cents for 3 credits cannot be made. Input "00000" if you do not set a value.

Example:
2S100032000750018000000000 CR :CR

In the above example, three patterns are set: $1 for 3 credits, $2 for 7 credits, and $5 for 18 credits.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(3) Number of times of cancellation by track skips

Format: 3SxxxxCR

Set the number of times of cancellation by track skips that will cause cancellation. The setting value can range from 0 through 99. If the number of times of cancellation by track skips are set to "0", cancellation is not performed using the skip count.
Input the value in four digits.

Example:
3S0505CR :CR

This example indicates that the number of times of cancellation by track skips was set to five. Transmission of the :(3Ah) code signifies that the setting is complete. An error code is returned if the setting cannot be effected. See the description for Submode 5, function mode 5 of the Manual Service Mode.

(4) Auto-play interval time

Format: 4SxxCR

Set the auto-play interval time to be used during auto-play. The setting value can range from 0 through 99 minutes. If the auto-play interval time is set to "0", auto-play will continue indefinitely without any time interval.

Example:
4S10CR :CR

This example indicates that the auto-play interval time was set to 10 minutes. Transmission of the :(3Ah) code signifies that the setting is complete. An error code is returned if the setting cannot be effected. See the description for Submode 6, function mode 5 of the Service Mode.

(5) Password

Format: 5SxxxxCR

Set the password with a 4-digit number ("xxxx") using the format shown above. The password can range from 0000 through 9999.

Example:
5S0123CR :CR

This example indicates that the password was set to 0123. Transmission of the :(3Ah) code signifies that the setting is complete. An error code is returned if the setting cannot be effected. See the description for Submode 6, function mode 1 of the Service Mode.

(6) ID No.

Format: 6SxxxxxxxxxxCR

Set the ID No. to an 11-digit number. The ID No. can range from 00000000000 through 99999999999.

Example:
6S00001234126CR :CR

This example indicates that the ID No. was set to 00001234126. Transmission of the :(3Ah) code signifies that the setting is complete. An error code is returned if the setting cannot be effected. See the description for Submode 6, function mode 4 of the Service Mode.

(7) Priority songs

Format: 7Sxxxxxxxx ..... xxxxCR

A maximum of twenty-five songs can be designated as priority songs by inputting their 4-digit song numbers in the format shown above. The 4-digit song numbers can range from 1100 through 9699. "00" cannot be input for the track number digits.

Example:
7S1101120345l0CR :CR

This example indicates that song numbers 1101, 1203, and 4510 are set as priority songs.
An error code is returned if the setting cannot be effected. See the description for Submode 4, function mode 2 of the Service Mode.

(8) Lockout songs

Format: 8Sxxxxxxxx ..... xxxxCR

A maximum of ten songs can be designated as lockout songs by inputting their 4-digit song numbers in the format shown above.
Input the starting date and time and the ending day and time for every single song. It is, therefore, necessary that the steps should be repeated individually for the entire number of songs. The data can be set in units of discs by inputting "00" in the digits for the track number. In such a case, a setting of schedule is not required. Simply inputting a 4-digit song number will unconditionally disable that song.

Example:
8S1101CR :CR
8S450171100071300CR :CR

In the above example, the song number 1101 is unconditionally disabled, and the song number 4501 will be disabled from 11:00 to 13:00 everyday.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(9) PREMIUM songs

Format: 9Sxxxxxxxx ..... xxxxCR

A maximum of 25 songs, each in 4 digits, can be specified for PREMIUM songs. Input the 4-digit song number (1100 to 9699). The data can be set in units of discs by inputting "00" in the digits for the track number.

Example:
9S1101120345 10CR :CR

In the above example, the song numbers 1101, 1203 and 4510 are set as PREMIUM songs.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(10) HIT MAKER songs

Format: 10Sxxxxxxxx ..... xxxxCR

A maximum of 25 songs, each in 4 digits, can be specified for HIT MAKER songs. Input the 4-digit song number (1100 to 9699). Data can be set in units of discs by inputting "00" in the digits for the track number.

Example:
10S1101120345 10CR :CR

In the above example, the song numbers 1101, 1203 and 4510 are set as HIT MAKER songs.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(11) BGM discs

Format: 11Sxxxxxxxx ..... xxxxCR

A maximum of 54 discs, each in 2 digits, can be specified for BGM discs. Input the 2-digit disc number (11 to 96).

Example:
11S111245CR :CR

In the above example, the disc numbers 11, 12 and 45 are set as BGM discs.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(12) HAPPY HOUR schedule

Format: 12Sxxxxx ..... xxxxxCR

A maximum of 10 patterns, each in 10 digits, can be specified for the HAPPY HOUR schedule. The 10-digit schedule consists of: the starting day in the first digit, followed by four digits showing the starting time; the next digit then represents the ending day and is followed by four digits showing the ending time. The numbers from 0 to 6 correspond to Sunday through Friday. A number 7 stands for everyday, 8 for Monday through Friday, and 9 for Monday through Saturday. Input hours in a 24-hour system.

Example:
12S1100011200210002 1200CR :CR

In the above example, Monday 10:00 to 12:00 and Tuesday 10:00 to 12:00 are set as HAPPY HOUR.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(13) AUTO PLAY schedule

Format: 13Sxxxxx ..... xxxxxCR

A maximum of 10 patterns, each in 10 digits, can be specified for the AUTO PLAY schedule. The 10-digit schedule consists of: the starting day in the first digit, followed by four digits showing the starting time; the next digit then represents the ending day and is followed by four digits showing the ending time. The numbers from 0 to 6 correspond to Sunday through Friday. A number 7 stands for everyday, 8 for Monday through Friday, and 9 for Monday through Saturday. Input hours in a 24-hour system.

Example:
13S1100011200210002 1200CR :CR

In the above example, Monday 10:00 to 12:00 and Tuesday 10:00 to 12:00 are set as AUTO PLAY.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(14) FREE PLAY schedule

Format: 14Sxxxxx ..... xxxxxCR

A maximum of 10 patterns, each in 10 digits, can be specified for the FREE PLAY schedule. The 10-digit schedule consists of: the starting day in the first digit, followed by four digits showing the starting time; the next digit then represents the ending day and is followed by four digits showing the ending time. The numbers from 0 to 6 correspond to Sunday through Friday. A number 7 stands for everyday, 8 for Monday through Friday, and 9 for Monday through Saturday. Input hours in a 24-hour system.

Example:
14S1100011200210002120OCR :CR

In the above example, Monday 10:00 to 12:00 and Tuesday 10:00 to 12:00 are set as FREE PLAY.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(15) AUTO PLAY conditions

Format: 15SxxxxxxCR

Specify conditions for AUTO PLAY in a number of 6 digits. In the first 2 digits, specify the number of BEST HIT songs to be eliminated from RANDOM AUTO PLAY. In the subsequent 4 digits, specify the ranking of the BEST HIT songs to be selected for BEST HIT AUTO PLAY.

Example:
15S200620CR :CR

In the above example, songs from the 1st to 20th are eliminated from RANDOM AUTO playback, and songs from the 6th to 20th are selected for BEST HIT AUTO PLAY.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(16) SAME DISC CONTINUOUS PLAY disabled

Format: 16SxxCR

Specify the number of songs disabled from SAME DISC CONTINUOUS PLAY in 2 digits.

Example:
16S05CR :CR

In the above example, five songs are disabled.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(17) Playback time limit

Format: 17SxxCR

Specify the limit time for playback in 2 digits.

Example:
17S03CR :CR

In the above example, playback time is limited to 3 minutes.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(18) PREMIUM CREDIT RATE

Format: 18SxxCR

Specify PREMIUM CREDIT RATE in 2 digits.

Example:
18S03CR :CR

In the above example, the rate is set at three times that of normal playback.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(19) BGM VOLUME

Format: 19SxxCR

Specify the preset value for the sound volume during the BGM disc playback in 2 digits.

Example:
19S03CR :CR

In the above example, the volume level is set to 3. The following volume levels can be specified:
Level 0: Normal
Level 1: −4 dB
Level 2: −8 dB
Level 3: −12 dB
Level 4: −16 dB
Level 5: −20 dB
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(20) Song selection password

Format: 20SxxxxCR

Specify the password to be used when selecting songs in 4 digits ranging from 0000 to 9999.

Example:
20S0101CR :CR

In the above example, the registered password is 0101.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(21) MENU INTERVAL TIME

Format: 21SxxCR

Specify the interval time for automatic menu rotation in 2 digits (in units of minutes).

Example:
21S02CR :CR

In the above example, the interval time is set to 2 minutes. Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(22) User display

Format: 22Sxxxx ..... xxxxxCR

Register the user display in an ASCII code consisting of a maximum of 150 characters. See the table below for available ASCII codes.

Example:
22SPIONEER JUKEBOX CJ-V99CR :CR

In the above example, "PIONEER JUKEBOX CJ-V99" is registered as the characters to be displayed.
Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

(23) Modem communication schedule

Format: 23Sxxxxx ..... xxxxxCR

A maximum of 10 modem communications schedules, each in 10 digits, can be specified. The 10-digit schedule consists of: the starting day in the first digit, followed by four digits showing the starting time; the next digit then represents the ending day and is followed by four digits showing the ending time. Numbers from 0 to 6 correspond to Sunday through Friday. A number 7 stands for everyday, 8 for Monday through Friday, and 9 for Monday through Saturday. Input hours in a 24-hour system.

Example:
23S1100011200210002 1200CR :CR

In the above example, Monday 10:00 to 12:00 and Tuesday 10:00 to 12:00 are set for modem communications. Completion of the setting will be informed by transmitting the :(3Ah) code. If the setting is not valid, an error code will be displayed.

2-2. Error Codes

The following error codes are provided for CJ-V99/CJ-V77 commands. An error code is transmitted to indicate the nature of the problem when a command cannot be executed.

Code	Definition
E00	Communications error, input buffer overflow
E01	Command not available
E02	Missing argument
E03	Without command character
E09	Overrun, framing error
E10	Password not input
E11	Missing data code

3. Automatic Service Mode by Modem Communications

The CJ-V99/CJ-V77 supports part of the most popular AT commands (Hayes) as modem control commands, and allows users to perform communications by using a modem that conforms to the AT commands.
3-1. Supported AT Commands and Answer Code
The AT commands and answer code supported by the CJ-V99/CJ-V77 are as follows:

3-1-1. Commands

①A
On-hook in the Answer mode.

3-1-2. Answer Code

The answer code only corresponds to the ASCII format.
①OK
Execution of the command is completed.
②RING
Ring is detected.
③CONNECT
Lines are connected.
④NO CARRIER
No carrier is detected.
⑤ERROR
An error is detected in the command.

3-2. Modem Communications Procedure

The CJ-V99/CJ-V77 controls the time of communications with modem by the schedule function in the Service mode. The answer code of the modem will be ignored if no schedule is specified. It is necessary, therefore, to specify hours and minutes for modem communications. The CJ-V99/CJ-V77 starts modem communications according to the specified schedule. Note that the CJ-V99/CJ-V77 only answers to incoming calls from other end, and has no function for calling.
The CJ-V99/CJ-V77 performs modem communications as follows:

1) The answer code RING is sent from the modem, and is activated from the incoming call.
2) Upon reception of RING, the CJ-V99/CJ-V77 sends the command ATA to the modem and activates it to on-line.
3) The CJ-V99/CJ-V77 readies the Automatic Service mode when it receives the answer code CONNECT from the modem.
4) After this, perform the same steps as in the normal Automatic Service mode. Start with inputting the password.
5) To terminate communications, input the password again. At the same time the CJ-V99/CJ-V77 exits from the Data Retrieval mode, it changes the modem to the local command state from on-line by operating DTR of the RS-232C control line and disconnects automatically.
6) During on-line, if no access is made by the supported commands in the Data Retrieval mode, the CJ-V99/CJ-V77 disconnects in the same manner as with step 5).

3-3. Status Setting Required for Modem

As the protocol supported by the CJ-V99/CJ-V77 is limited in the way mentioned above, the modem requires a status setting as mentioned below. With AT modems, the status must be set in the non-volatile profile contained in the modem.

1) Returns no echo in the command state.
   Command: ATE0
2) Returns answer code.
   Command: ATQ0
3) Returns answer code in ASCII format.
   Command: ATV1
4) Returns no answer code other than 3-2-1.
   Command: ATX0
5) Disconnects when the control line ER (DTR) turns to OFF from ON, and changes to the local command state.
   Command: ATD2
6) Uses the CR code as a terminator at the end of an answer code.
   Command: ATS3=13
7) Specifies the set OFF time of the control line ER (DTR) to 0.08 second or less.
   Command: ATS25=5

3-4. Connection to Modem

Modem (25 pins)		CJ-V99/ CJ-V77
GND 1	——	1 GND
TXD 2	←	2 TXD
RXD 3	→	3 RXD
RTS 4	←	6 RTS
CTS 5	→	5 CTS
DSR 6	→	8 DSR
GND 7	——	7 GND
DTR 20	←	4 DTR

CONNECTION TO EXTERNAL EQUIPMENT

Connection of the Microphone

- Connect a Pioneer microphone (DM-V151).

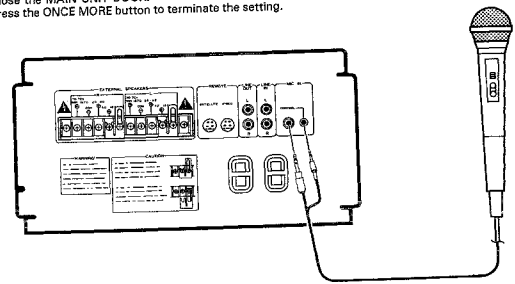
Setting before MIC PAGING

Use this function when you want to call a person during playback.

1. Turn the TALK switch of the microphone to on.
2. Press the ONCE MORE button of the microphone to enable it to be used.
3. Open the MAIN UNIT DOOR and adjust the sound volume of the microphone using the MIC LEVEL CONTROL knob located in the amplifier.
4. Close the MAIN UNIT DOOR.
5. Press the ONCE MORE button to terminate the setting.

MIC PAGING operation

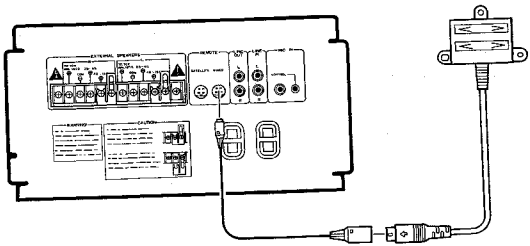
1. Turn ON the TALK switch of the microphone.
2. Press the ONCE MORE button on the microphone to enable it to be used. During playback, the sound volume of the jukebox will automatically decrease.
3. Pressing the ONCE MORE button again will terminate the MIC PAGING mode and resume the sound volume of the jukebox.



DM-V151

Connection of the Wired Remote Control Unit

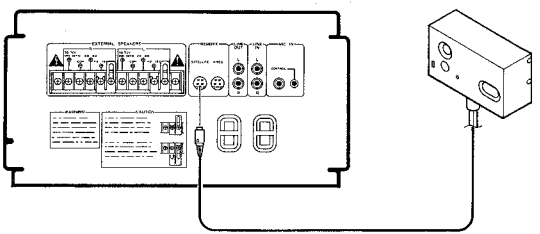
A remote-controlled operation can be performed by connecting the wired remote control unit (CU-V129) to the WIRED REMOTE terminal via the optional extension cable (JC-74).



Connection of the Remote Control Satellite

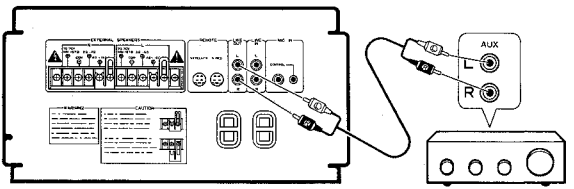
Use the Remote Control Satellite if the distance between the CD Jukebox and the supplied remote control unit is too far or if there is an obstacle between them, that results in improper remote-controlled operation.

Connect the optional Remote Control Satellite (JA-V150IR) to the SATELLITE REMOTE jack. A remote-controlled operation can be performed by pointing the remote control unit at the JA-V150IR.



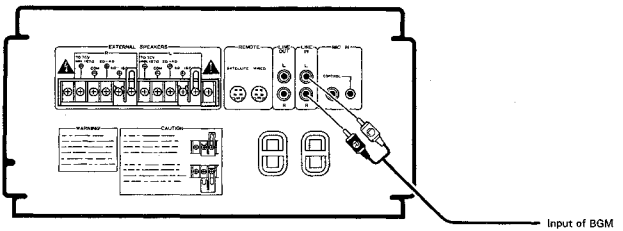
Connection of an External Amplifier

Connect an external amplifier to the LINE OUT terminal. Sound from CDs can be output via the amplifier.



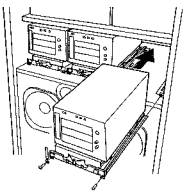
Input of Sound from External Equipment

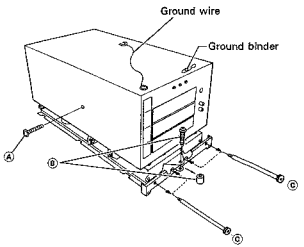
Connect the sound output terminal of the external equipment to the LINE IN terminal. The sound source for the BGM can be output when no song is selected (INTERVAL TIME).



Installing an Additional CD Changer

Insert the CD Changer into the CD Changer rack by aligning the rails on the right and left sides of the Changer to the rack. Before inserting, remove the transport screws A, B, C.





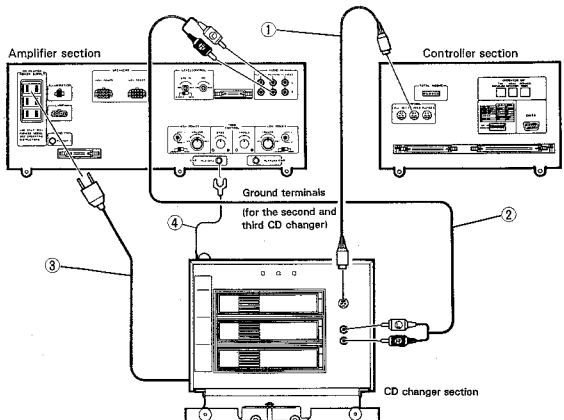
EXTENSION CD CHANGER CONNECTIONS

①Connect the CD changer's CONTROL jack to the controller's CONTROL jack with the supplied control cord.
②Connect the CD changer's AUDIO OUT jacks to the amplifier's INPUT jack with the supplied audio cord.
③Connect the CD changer's power cord to the CD PLAYER POWER SUPPLY of the amplifier section.
④Connect the ground wire to the ground terminal.

The CJ-V99 is sold connected to one extension changer.

The CJ-V77 is sold connected to two extension players.

NOTE:
When connecting the CD changer to the amplifier and controller sections, connect the second CD changer to PLAYER 2, and the third CD changer to PLAYER 3.



CONNECTING THE SPEAKERS

Speaker Terminals

The rear panel of the CJ-V99/CJ-V77 is equipped with terminals (EXTERNAL SPEAKERS) for connecting the external speakers.

CAUTION
THIS INSTALLATION SHOULD BE MADE BY QUALIFIED SERVICE PERSONNEL AND SHOULD CONFORM TO ALL LOCAL CODES.

(1) Short terminal
(2) 4 Ω to 16 Ω terminal
(3) 2 Ω to 4 Ω terminal
(4) COMMON GND terminal
(5) 70.7CV terminal

The 2 Ω to 4 Ω and the 4 Ω to 16 Ω terminals are called the low impedance terminals, and the 70.7CV terminal is called the high impedance terminal.

1. Low Impedance Connection and High Impedance Connection

(1) Low Impedance Connection

Used when sound quality is of greatest importance.
Connects 2 to 4 Ω or 4 to 16 Ω speakers.
The 4 to 16 Ω terminal directly connects the amplifier output, resulting in high quality sound.
For speakers connected in parallel, the impedance is decreased, and the number of connected speakers is limited.
(See 4. Connecting Low Impedance Terminals.)
The longer the distance between the amplifier and speakers, the speaker input decreases due to speaker cable resistance.

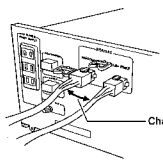
(2) High Impedance Connection

To prevent speaker input reduction caused by the speaker cable resistance, a transformer is installed in the speaker to increase the impedance and increase the voltage for transmitting the amplifier output.
(See 5. Connecting the High Impedance Terminal.)
(For CJ-V99/CJ-V77, the amplifier output voltage is increased to 70.7 V.)
Using the high impedance connection, many speakers can be connected.
(The transformer impedance is changed according to the number of connected speakers.)
The high impedance connection is also used to prevent power loss caused by a long speaker cable.

2. Switching the Amplifier

CJ-V99/CJ-V77 is equipped with 30 W and 100 W amplifiers.
The following two modes can be switched alternatively:
100 W for internal speakers
30 W for external output terminal
30 W for internal speakers
100 W for external output terminal

The output can be switched by changing the connector on the left side of the amplifier unit front panel.
When delivered, the internal speaker and external output terminal are set for 100 W and 30 W, respectively (the terminal and connector are connected using the same color).



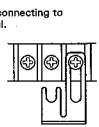
3. Setting the Short Bar

Speakers are connected to the connection terminal and the COMMON GND terminal.
Remove the short bar between pins 1 and 2 to use the 4 to 16 Ω terminal.
Set the short bar between pins 1 and 2 when using another terminal (2 to 4 Ω terminal or high impedance 70.7CV terminal).

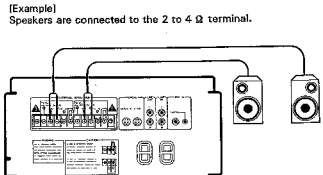
CAUTION :
Only one of the 4 to 16 Ω, 2 to 4 Ω, and 70.7CV terminals can be used at one time.

Short bar setting for connecting to the 2 to 4 Ω or 70.7CV terminal.

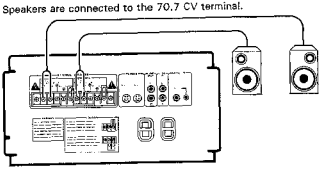
Short bar setting for connecting to the 4 to 16 Ω terminal.



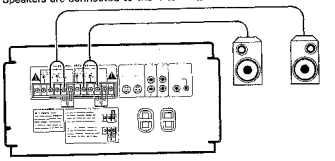
[Example]
Speakers are connected to the 2 to 4 Ω terminal.



Speakers are connected to the 70.7 CV terminal.



Speakers are connected to the 4 to 16 Ω terminal.



4. Connecting Low Impedance Terminals

The low impedance terminals are set to the following reference values:

2 to 4 Ω terminal: 2 Ω

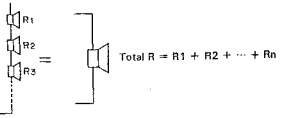
4 to 16 Ω terminal: 8 Ω

The low impedance terminal type used depends on the impedance of the connected speaker.

(a) Series Connection

Set the speaker impedance to R.

When the speakers are connected in series,



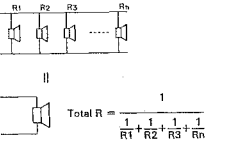
For instance, when two 6 Ω speakers are connected in series,

Total R = 6 + 6 = 12 Ω

Thus, the 4 to 16 Ω terminal is used.

(b) Parallel Connection

When the speakers are connected in parallel,



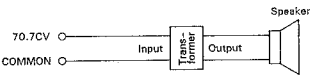
For instance, when two 6 Ω speakers are connected in parallel,

$$\text{Total R} = \frac{1}{\frac{1}{6}+\frac{1}{6}} = 3\ \Omega$$

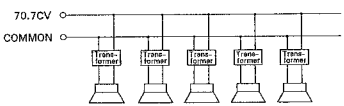
Thus, the 2 to 4 Ω terminal is used.

5. Connecting the High Impedance Terminal

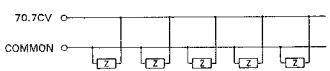
After connecting the speaker's transformer, connect the speaker unit to the high impedance terminal.



As the transformer's input impedance is high, many speakers can be connected to the 70.7CV terminal.



⇩ Transformer input impedance: Z



$$\text{Total } Z = \frac{1}{\frac{1}{Z}+\frac{1}{Z}+\frac{1}{Z}+\frac{1}{Z}+\cdots+\frac{1}{Z}} = \frac{Z}{n}$$

Since the amplifier output is 30 W or 100 W, a speaker with a wattage exceeding this output value cannot be connected.

But, how much impedance is available for connected speakers?
Let's calculate a wattage.
The wattage can be calculated by the following formula:

$$\text{(Watt W)} = \text{(Current I)} \times \text{(Voltage V)}$$

$$= \frac{\text{(Voltage V)}^2}{\text{(Impedance Total Z)}}$$

Therefore,
In the case of 30 W,

$$W = \frac{(70.7)^2}{\frac{Z}{n}} \leqq 30$$

In the case of 100 W,

$$W = \frac{(70.7)^2}{\frac{Z}{n}} \leqq 100$$

In other words, the total impedance connected in parallel should be as follows:

30 W: Total Z ≧ 166.7 Ω
100 W: Total Z ≧ 50 Ω

The following shows the relationship between the number of speaker transformers and minimum impedance.

Minimum Input Impedance of Parallel-Connected Speaker Transformers

7. Selecting Speakers and Transformers Using the Graph

When speakers are connected to the high impedance terminal, the following three factors are concerned:

(1) Speaker wattage (P)
(2) Speaker transformer impedance (Z)
(3) Number of speakers (n)

These factors are in the following relationship:

In the case of the 30 W amplifier:

$$P = \frac{(70.7)^2}{Z} \leqq \frac{W}{n}$$

$$Z > \frac{(70.7)^2}{30} \times n = \frac{5000}{30}$$

In the case of the 100 W amplifier:

$$P = \frac{(70.7)^2}{Z} \leqq \frac{W}{n}$$

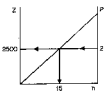
$$Z > \frac{(70.7)^2}{30} \times n = \frac{5000}{100}$$

According to the graph, Z is calculated from W and n.

Reading the Graph

Fig-1 and Fig-2 are graphs showing the relationship of W, Z, and n for 30 W and 100 W, respectively.

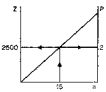
(1) If the speaker wattage is known



The n and Z values are read based on the W value.
For example, if W = 2 W,
n = 15
Z = 2500.

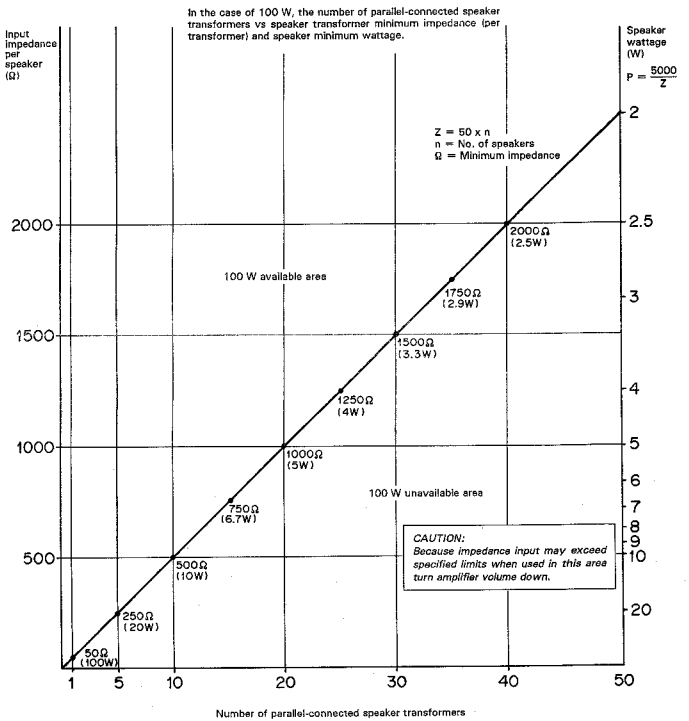
That means, a maximum 15 units of 2 W speakers can be connected.
The transformer impedance must be 2500 Ω or more.

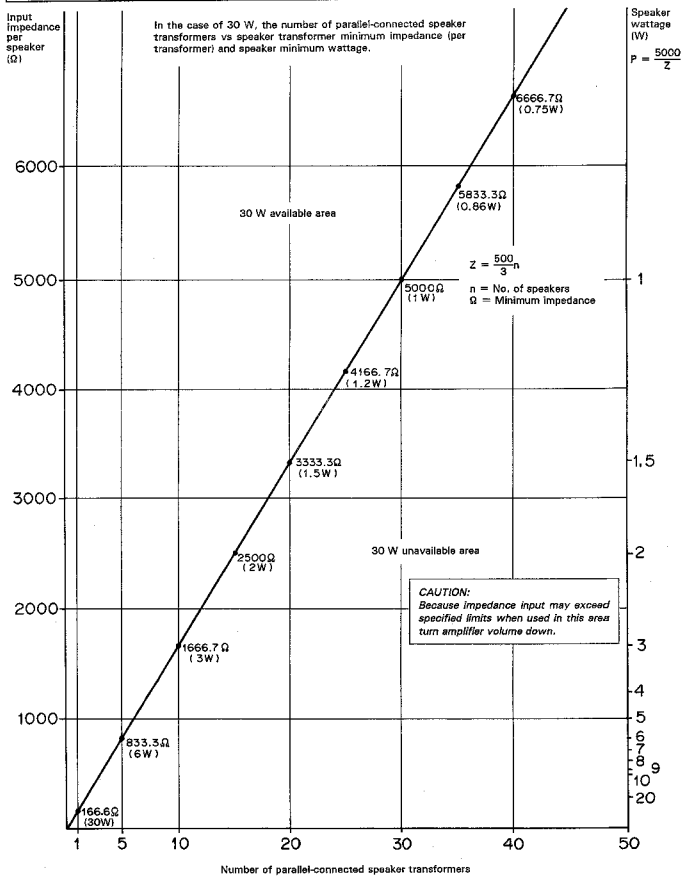
(2) If the number of speakers is known



The W and Z values are read based on the n value.
For example, if n = 15,
W = 2
Z = 2500.

Therefore, when 15 speakers are connected, each speaker should have 2 W and the transformer impedance must be 2500 Ω or more.
Connect speakers with an impedance of at least 2W as a safety precaution.


In the case of 100 W, the number of parallel-connected speaker transformers vs speaker transformer minimum impedance (per transformer) and speaker minimum wattage.
Input impedance per speaker (Ω)
Speaker wattage (W)
P = 5000/Z
Z = 50 x n
n = No. of speakers
Ω = Minimum impedance
100 W available area
100 W unavailable area
CAUTION:
Because impedance input may exceed specified limits when used in this area turn amplifier volume down.
50Ω (100W)
250Ω (20W)
500Ω (10W)
750Ω (6.7W)
1000Ω (5W)
1250Ω (4W)
1500Ω (3.3W)
1750Ω (2.9W)
2000Ω (2.5W)
2000
1500
1000
500
2
2.5
3
4
5
6
7
8
9
10
20
1
5
10
20
30
40
50
Number of parallel-connected speaker transformers


Input impedance per speaker (Ω)
In the case of 30 W, the number of parallel-connected speaker transformers vs speaker transformer minimum impedance (per transformer) and speaker minimum wattage.
Speaker wattage (W)
P = 5000/Z
6666.7Ω (0.75W)
5833.3Ω (0.86W)
30 W available area
Z = 500/3 n
n = No. of speakers
Ω = Minimum impedance
5000Ω (1 W)
4166.7Ω (1.2W)
3333.3Ω (1.5W)
30 W unavailable area
2500Ω (2W)
CAUTION:
Because impedance input may exceed specified limits when used in this area turn amplifier volume down.
1666.7Ω (3W)
833.3Ω (6W)
166.6Ω (30W)
6000
5000
4000
3000
2000
1000
1
1,5
2
3
4
5
6
7
8
9
10
20
1
5
10
20
30
40
50
Number of parallel-connected speaker transformers

ATTACHING THE COIN ACCEPTOR (The CJ-V99 is sold with coin acceptor installed.)

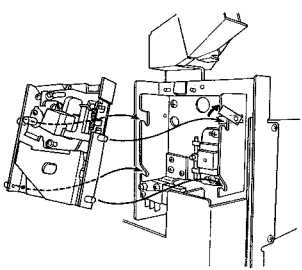
When using coins for the CD jukebox, the coin acceptor must be installed.

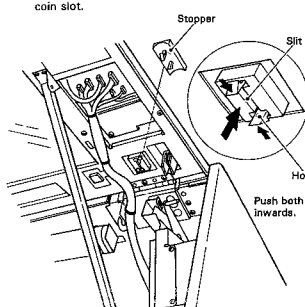
Install the coin acceptor.
Insert the upper part first.

*Use an N-530-A coin acceptor made by CONLUX USA.

CAUTION
THIS INSTALLATION SHOULD BE MADE BY QUALIFIED SERVICE PERSONNEL AND SHOULD CONFORM TO ALL LOCAL CODES.

To prevent coin input, install the supplied stopper in the coin slot.

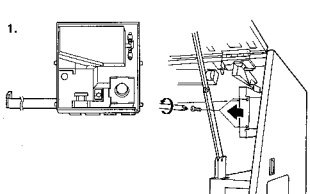


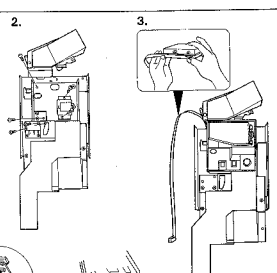


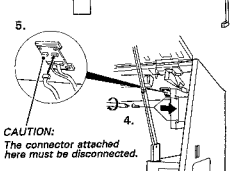
***To use the NRI coin acceptor**

1. Remove the coin acceptor housing from the jukebox.
2. Remove the board and the screws from the coin acceptor housing as shown in the figure.
3. Install the coin acceptor into the housing.
4. Install the coin acceptor housing to the jukebox.
5. Connect the NRI cord by facing the red line downward.
6. Remove the limiter from the coin slit, then reinstall it.

• This enables Canadian coins to be used.



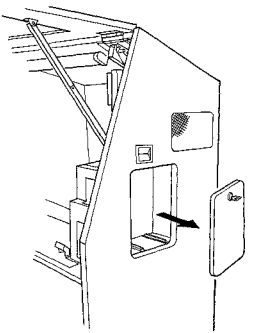




ATTACHING THE BILL ACCEPTOR (The CJ-V99 is sold with bill acceptor installed.)

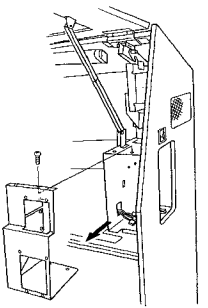
When using bills for the CD jukebox, the bill acceptor must be installed.

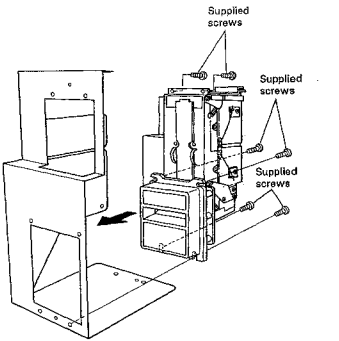
CAUTION
THIS INSTALLATION SHOULD BE MADE BY QUALIFIED SERVICE PERSONNEL AND SHOULD CONFORM TO ALL LOCAL CODES.



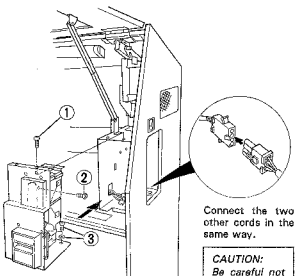
①Open the cover of the money storage located on the right side of the CD juke.

②Take out the bill holder, and install the bill acceptor.





③Attach the bill acceptor to the CD jukebox with the screws.
Connect the connection cords.
i) Attach the bill acceptor to the bill holder.
ii) Fasten the bill holder with the screw ①.
iii) Close the menu door.
iv) Adjust the bill acceptor horizontally and vertically (Press the bill acceptor against the panel side so that there is no gap, and the bill inlet is located at the center.); then fasten the lower part with the two screws and the two washers ③.
v) Tighten the screws ①, ② on both sides.

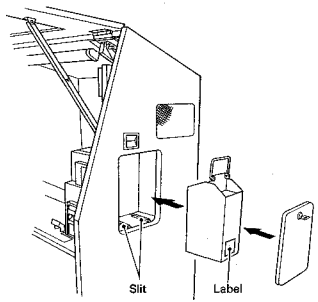


Connect the two other cords in the same way.

CAUTION:
Be careful not to connect the cords of the main unit side.

* Use an NB-2JA-400, NB-2BA-400 and NB-2BA-600 made by CONLUX USA for the bill acceptor.

④Reinstall the coin box.
Insert it into the slot with the labeled side facing out.

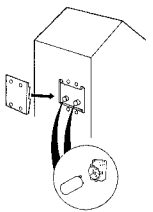


CHANGING THE GLOW LAMP

To replace the glow lamp, remove the glow lamp cover on the rear.

①Turn the power OFF before changing the glow lamp.
②Open the glow lamp cover.
③Replace the glow lamp.
- The right glow lamp is for the lower fluorescent lamp, and the left glow lamp is for the upper fluorescent lamp.
- Remove the burnt-out glow lamp by turning it to the left. Install a new glow lamp.

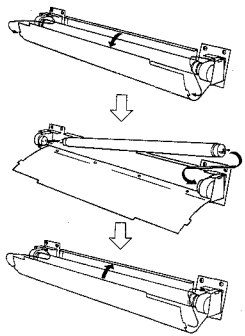
④Install the glow lamp cover and tighten the screws.



CHANGING THE FLUORESCENT LAMPS

There are two fluorescent lamps located on the top and the bottom of the menu board.

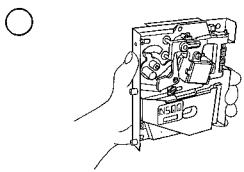
①Turn the power OFF before changing the fluorescent lamps.
②Open the menu door.
③Remove the colored cover of the fluorescent lamp.
④Replace the fluorescent lamp (15 W).
⑤Fasten the colored cover as before.

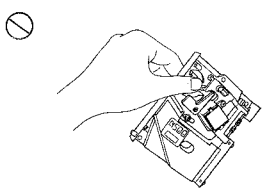


COIN ACCEPTOR CLEANING (MODEL N-530-A)

HANDLING

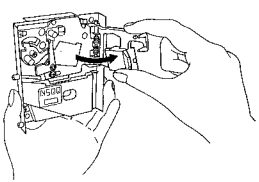
- Place your hand on both sides of acceptor. Grasping areas near mounting studs on each side, hold the acceptor firmly.
- Stand the acceptor vertically, and taking care to hold the rear panel as much as possible. If this is not possible, place the acceptor with the front panel facing upwards.

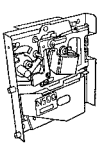




CLEANING

The coin acceptor must be cleaned regularly. Dust and dirt buildup from coins, and other objects can prevent or block coins from running smoothly through the machine. Accumulated dirt can result in the machine becoming unable to recognize correct coin value. Clean the machine regularly to avoid dust and dirt buildup.
Clean coin channel, magnet, cradle axle and axle bearing by wiping parts with waste cotton or similar dust-free cloth material.

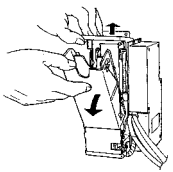




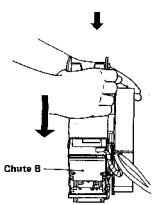
BILL ACCEPTOR CLEANING

INSPECTION: If authentic $1 or $5 bill is not accepted, or is rejected after insertion

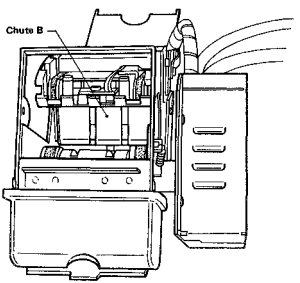
(The figure shows model NB-2BA)



Push up the latch and pull down the stacker.
If full of bills, withdraw them.
Remove any bills or foreign matter clogging the stacker.



Press down the latch and pull up the stacker.



Remove any bills or foreign matter clogging the stacker.
Cut the power off and turn it on again.
(Warning: Be sure to return the stacker to original position.)

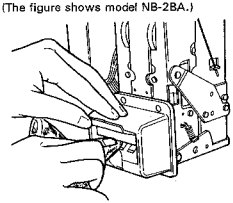
If the bill validator still will not accept any bills, check the following.

- Are the stacker and the chute set securely?
- Is the photo sensor or are the magnetic heads dirty?
- Are the conditions in Additional Specifications 2 and 3 met?

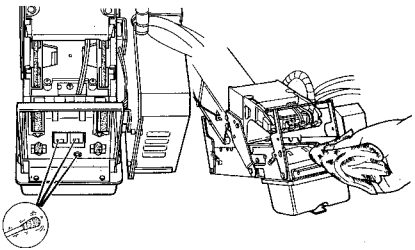
CLEANING

If the moving parts become dirty, get wet, or are stuck with foreign particles, proper operation cannot be maintained. Clean according to the requirements of the situation.

(The figure shows model NB-2BA.)

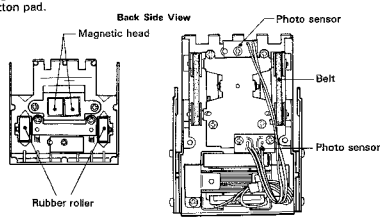


Wipe the bill insertion opening with a soft cloth.



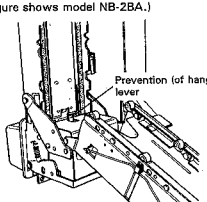
Clean the photo sensor and magnetic heads with a cotton pad.

Wipe clean the chute roller, and belt with a soft cloth.

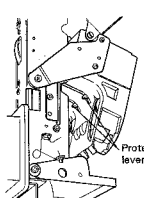


INSPECTION

(The figure shows model NB-2BA.)



Prevention (of hanging) lever
It should pull out easily and when released, return smoothly without sticking.



Protection (from pull-out) lever
It should push easily, and when released, return smoothly without sticking.

SPECIFICATIONS

Amplifier Section

Continuously Average Power Output is 100 Watts* plus 30 Watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz, with no more than 0.5 % total harmonic distortion.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.

Frequency Response ····· 20 Hz to 20 kHz ±1.5 dB
Tone Control
Bass (100 Hz) ····· Max. +10 dB, Min. −10 dB
Treble (10 kHz) ····· Max. +10 dB, Min. −10 dB

CD changer section

Signal-to-Noise ratio ····· 94 dB or more
Dynamic Range ····· 85 dB or more
Wow and Flutter ····· ±0.001 % or less
Frequency Response ····· 4 Hz to 20 kHz ±1.5 dB
Total Harmonic Distortion ····· 0.1 % or less
Output Voltage ····· 1.8 V
Number of channels ····· 2 channels (stereo)
Dimensions ····· 239 (W) x 463 (D) x 215 (H) mm
9-7/16 (W) x 18-1/4 (D) x 8-7/16 (H) in
Weight ····· 9 kg (19 lb 14 oz)
Power Requirements ····· AC120 V, 60 Hz
Power Consumption ····· 25 W

Speaker Section

Enclosure ····· Bass-reflex type
Loudspeakers:
Woofer ····· 25 cm (10 in) x 2
Mid range ····· 10 cm (4 in) x 2
Tweeter ····· 6.6 cm (2-1/2 in)x 2
Expansion speaker ····· 10 cm (4 in) x 2
Nominal Impedance ····· 8 Ω
Frequency Range ····· 30 Hz to 20 kHz
Sensitivity ····· 90 dB/W·m
Maximum Power ····· 100 W

Miscellaneous

Power Requirements ····· AC120 V, 60 Hz
Power Consumption ····· 460 W
Dimensions ····· 797 (W) x 618 (D) x 1640 (H) mm
31-3/8 (W) x 24-5/16 (D) x 64-9/16 (H) in
Weight
CJ-V77 ····· 145 kg (319 lb 12 oz)
CJ-V99 ····· 158 kg (348 lb 6 oz)
Operating temperature ····· +5°C to +35°C
(+41°F to +95°F)
Operating humidity ····· 5 % to 85 %

Audio Terminal

LINE IN ····· RCA pin-jack
MIC IN ····· to DM-V151 (optional)
LINE OUT ····· RCA pin-jack
EXT SP terminal ····· 2~4 Ω (or)
4~16 Ω (Direct out) or High Power: more 50 Ω,
Low Power: more 167 Ω

Others (CJ-V77)

Number of CD discs ····· 54 CD discs
(18 discs with standard plus additional 36 with option)
Number of CD players ····· One CD player
(additional two CD players with option)
Acceptance of $1 and $5 bills (optional)
Acceptance of 25 cents coins (optional)
Remote control unit ····· Volume up/down, cancellation

Others (CJ-V99)

Number of CD discs ····· 54 CD discs
(36 discs with standard plus additional 18 with option)
Number of CD players ····· Two CD player
(additional one CD player with option)
Acceptance of $1 and $5 bills
Acceptance of 25 cents coins
Remote control unit ····· Volume up/down, cancellation

Accessories

- Remote control unit x 1
- Size "AAA" (IEC R03) dry cell batteries x 2
- Key (front door x 2)
- Key (charge storage cover x 3)
- Magazine x 3 (CJ-V99 includes 6 magazines)
- Coin box x 1
- Stopper for the coin acceptance inlet x 2
- Menu number label x 1
- Indication plate x 2
- Coin sheet x 1
(Not included with CJ-V99)
- Screw A (M4 x 8) x 6 (Not included with CJ-V99)
- Wood screw x 2 (Not included with CJ-V99)
- Screw B (tapping; 3 x 6) x 1
(Not included with CJ-V99)
- Washer x 2 (Not included with CJ-V99)
- Follow-up card x 1
- Operating instructions x 1
- Owner's manual x 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

The Magazine Type Multi-Play CD Players with mark and the Magazines with the same mark are compatible for 5-inch (12cm) discs.

Service Manual

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

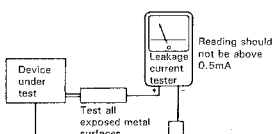
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER-recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. DISASSEMBLY

2.1 REMOVING THE TOP DOOR ASSEMBLY

1. Open the menu door, and remove two screws ① , two Stopper A and two R pins to remove the menu board assembly.

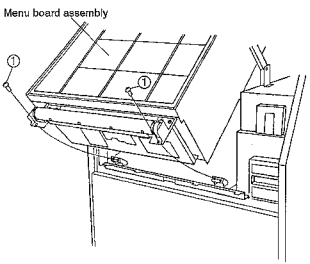


Fig. 2-1

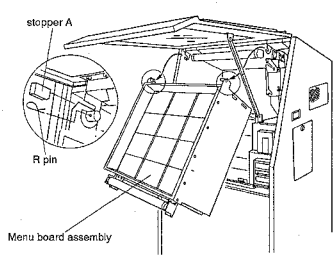


Fig. 2-2

2. Loosen four screws ② and remove two screws ③ to remove the upper lamp assembly.
3. Remove two screws ④ to remove the CA holder C assembly.

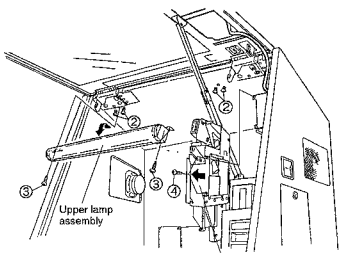


Fig. 2-3

4. Remove six screws ⑤ , two screws ⑥ and two screws ⑦ to remove the top door assembly.

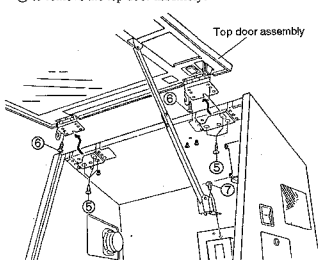


Fig. 2-4

2.2 REMOVING THE MENU MOTOR ASSEMBLY

1. Remove two screws ① to remove the menu motor assembly.

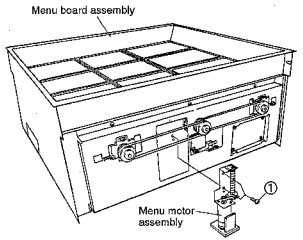


Fig. 2-5

2.3 REMOVING THE SYNCHRO BELT

1. Loosen two screws ① and remove two springs with plier, and remove two synchro belts by pushing the synchro pulley in the direction of arrow.

Note: When the synchro belt is replaced, be sure to perform the three surfaces of the menu synchronous adjustment.

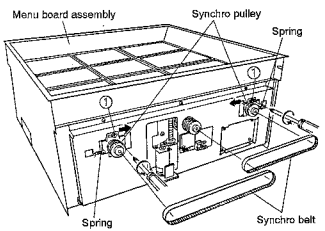


Fig. 2-6

2.4 REMOVING THE LAMP AND NETWORK ASSEMBLY

1. Remove six screws ① to remove the network assembly.
2. Remove four screws ② to remove the LAMP.

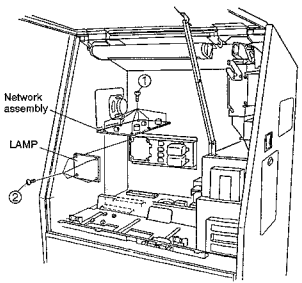


Fig. 2-7

2.5 REMOVING THE ROTA AND POSS

1. Remove four screws ① to remove the ROTA.
2. Remove a screw ② to remove the POSS.

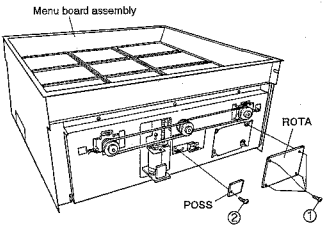


Fig. 2-8

2.6 REMOVING THE MESS, DISP, SENS AND KEYB

1. Remove six screws ① to remove the MESS.
2. Remove four screws ② to remove the DISP.
3. Remove eight screws ③ to remove the KEYB.
4. Remove two screws ④ to remove the SENS.

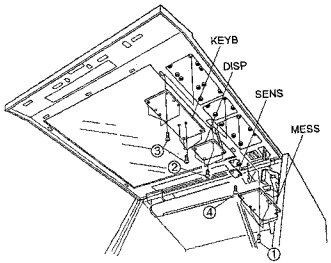


Fig. 2-9

2.7 REMOVING THE AMP, COMMANDER AND CD PLAYER

1. Remove three screws ① to remove the AMP.
2. Remove two screws ② to remove the commander.
3. Remove two screws ③ to remove the CD player.

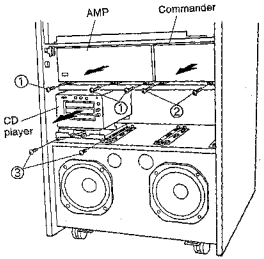


Fig. 2-10

2.8 REMOVING THE SPEAKER (WOOFER)

1. Remove four screws ① and disconnect the connector of speaker cord to remove the speaker.

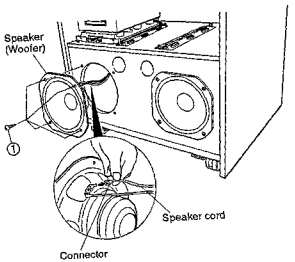


Fig. 2-11

2.9 REMOVING THE GLASS

1. Remove the top door assembly. (Refer to section 2.1.)
2. Set the glass side of top door assembly to the downward.Remove thirty – seven screws ① to remove the top door base, then remove the glass.

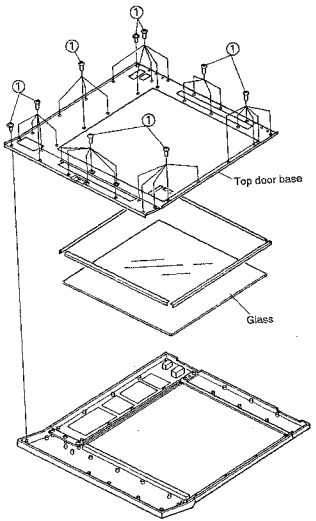


Fig. 2-12

2.10 REMOVING THE GLOW LAMP

Refer to the operating instructions section (See page 74).

3. P. C. BOARDS NAME

- **MAIN SECTION**

CONT (DWG1250)	: CONTROL UNIT
ILLM (DWG1262)	: ILLUMINATION UNIT
KEYB (DWS1101)	: KEY BOARD
ROTA (DWX1109)	: ROTATION
POSS (DWX1110)	: POSITION OF STOP
LAMP (DWX1111)	: LAMP
SENS (DWX1112)	: SENSE
CNTB (DWX1132)	: COUNTER BOARD
PAMP (DWH1008)	: POWER AMP
TCMX (DWK1031)	: TONE CONTROL and MIXER
MTRP (DWR1109)	: MAIN TRANSFORMER'S PRIMARY
MTRS (DWR1110)	: MAIN TRANSFORMER'S SECONDARY
STRP (DWR1111)	: SUB TRANSFORMER'S PRIMARY
STRS (DWR1112)	: SUB TRANSFORMER'S SECONDARY
SSLC (DWK1033)	: SOURCE SELECT and LEVEL CONTROL
POWB (DWR1103)	: POWER BOARD
ACIN (DWR1108)	: AC INPUT BOARD
PSWB (DWS1163)	: POWER SWITCH BOARD
RSSB (DWX1243)	: RS232C and SWITCH BOARD
OPER (DWS1156)	: OPERATION
CRJB (DWX1168)	: CONTROL and JACK BOARD
DISP (DWG1260)	: DISPLAY
MESS (DWG1261)	: MESSAGE
EXTB (DWK1032)	: EXTERNAL BOARD
BRAN (DWX1245)	: BRANCH
LACN (DWX1248)	: LAMP CONNECTION
COTM (DWX1249)	: COIN TERMINAL

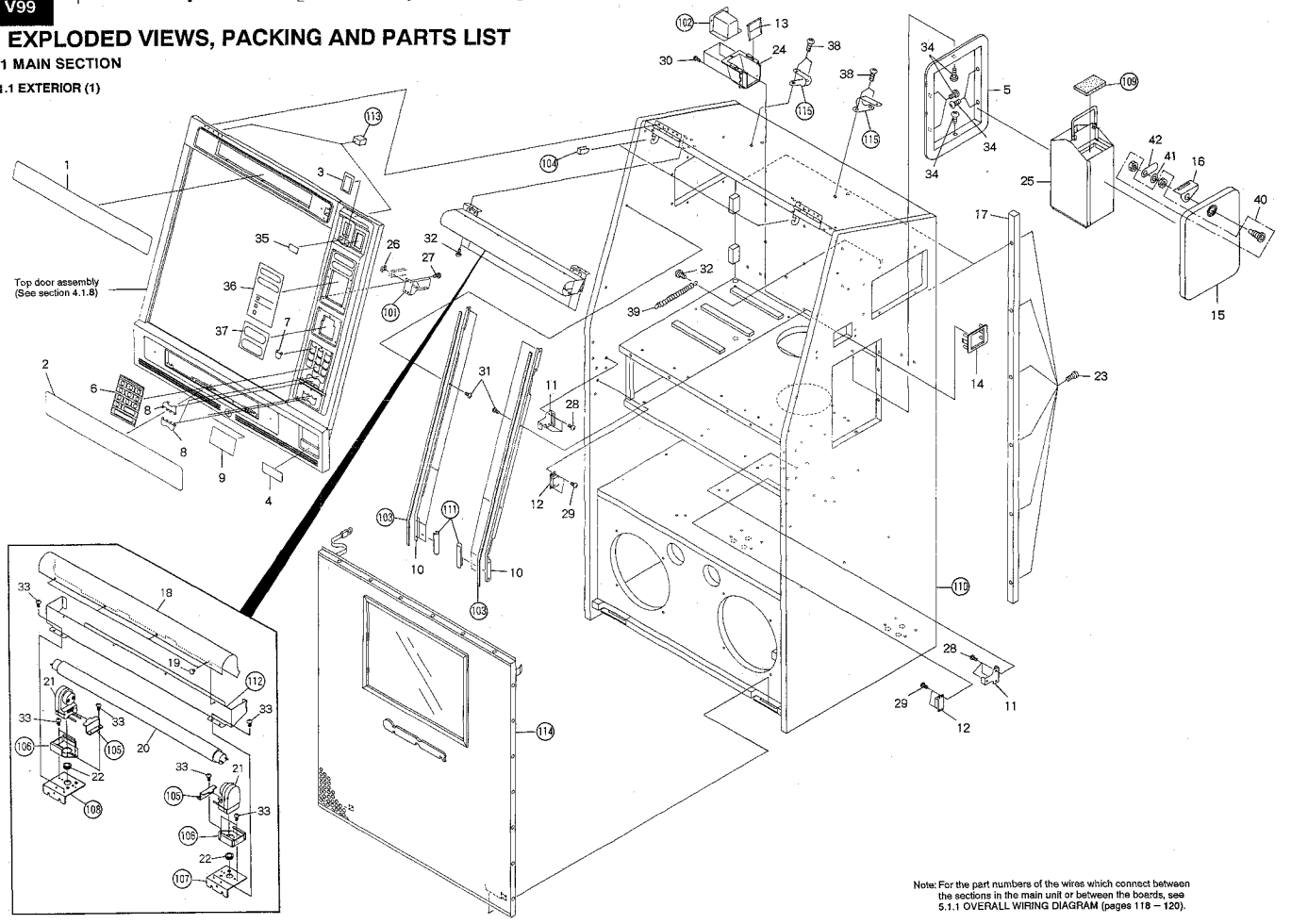
- **CD PLAYER SECTION**

EKEY	: EJECT KEY
DEGT (DWX1116)	: DIGITAL DECODING UNIT
ANLG (DWX1117)	: ANALOG UNIT
DJAK	: DIGITAL JACK
PJAK	: PIN JACK
MJSW	: MAGAZINE EJECT SWITCH
SENS	: SENSOR
REJC	: REJECT
FREC	: FLEXIBLE READER CONNECTOR
HRMB	: HOUR METER BOARD
RMJB	: REMOTE JACK BOARD

4. EXPLODED VIEWS, PACKING AND PARTS LIST

4.1 MAIN SECTION

4.1.1 EXTERIOR (1)


Top door assembly
(See section 4.1.8)
Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

NOTES:

- *The Part with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts List

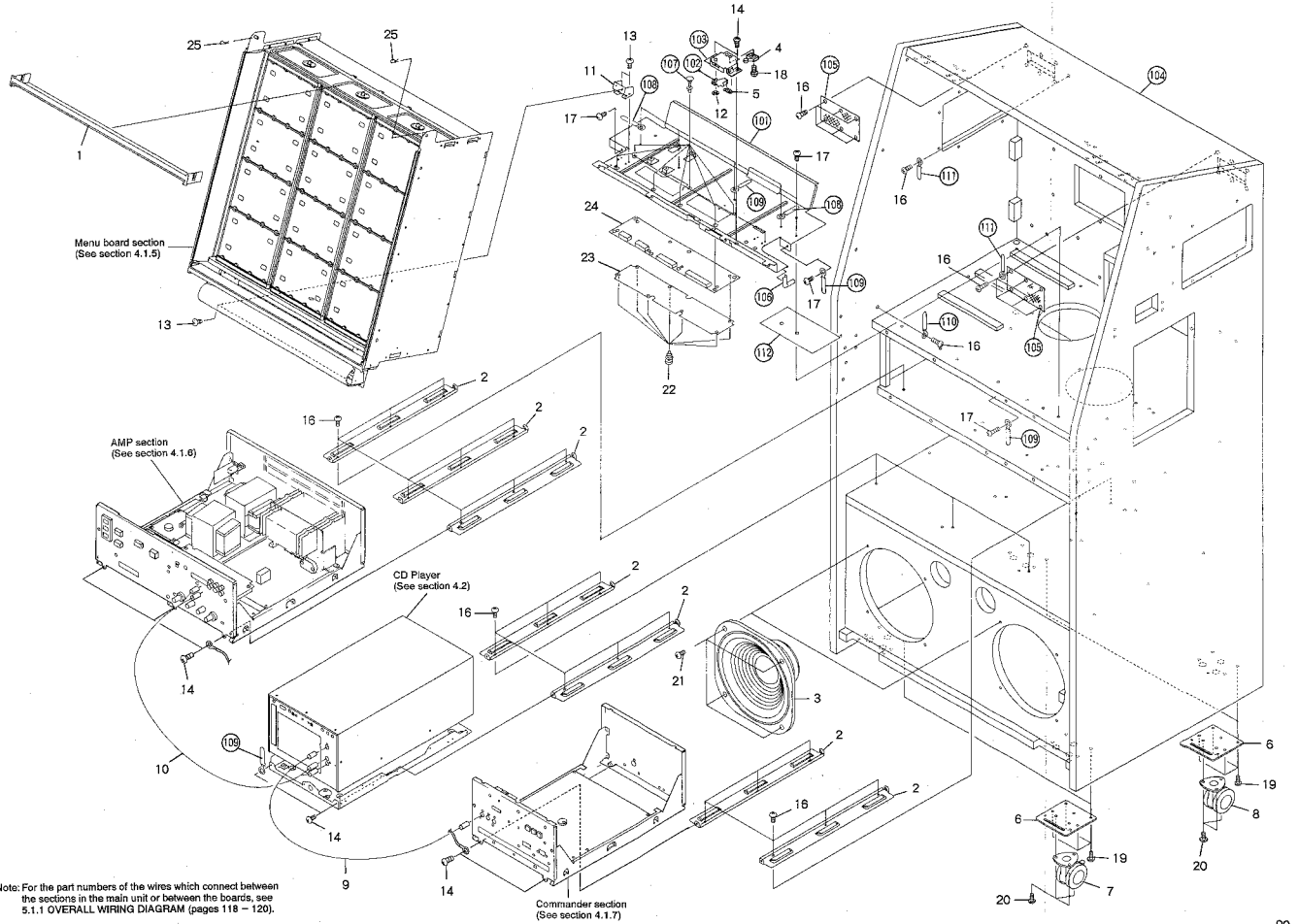
Mark	No.	Description	Part No.
	1	Sign board (upper)	DAH1507
	2	Sign board (under)	DAH1380
	3	Coin - return lever sheet A	DAH1183
	4	Bill sheet	DAH1596
	5	Frame	SNA1233
	6	Key sheet	DAH1431
	7	Key knob A	DNK1236
	8	Key knob B	DNK1214
	9	Key sheet (B)	DAH1432
	10	Door stopper	SNB1035
	11	Hook holder	SNB1037
	12	Magnet catch	SNX1034
	13	Coin - return door	DNK1618
	14	Coin - return hole cover	DNK1616
	15	Cover of the money storage	DNH1335
	16	Reinforced plate	DNF1256
	17	Rail assembly	SLH1050
	18	Illumination sheet	DEC1224
	19	Plastic rivet	DEC - 176
	20	Fluorescent lamp	DEL - 110
⚠	21	Fluorescent lamp socket (upper)	DKK1006
	22	Bushing	DEC1220
	23	Screw	SBA - 194
	24	Coin - return tray	DNK1617
	25	Coin box assembly	DXB1229
	26	E ring ϕ 3	YE30FUC
	27	Screw	PMH30P060FMC
	28	Screw	SBA1061
	29	Screw	RWC35P160FZK
	30	Screw	IPZ30P080FMC
	31	Screw	TNC35P140FZK
	32	Screw (3.5 × 12mm)	DBA1007
	33	Screw	BBZ30P060FMC
	34	Screw	CWC35P200FZK
	35	Coin sheet	DAH1598
	36	Display plate (A)	DAH1592
	37	Display plate (B)	DAH1593
	38	Screw	OYC35P160FMC
	39	Cord spring	DBH1184
	40	Cam lock	DXC - 101
	41	Washer	DBE1003
	42	Lock plate	DNF1329
	101	DS holder assembly	DXB1096
	102	Coin guide (B)	DNK1615
	103	Shield packing (B)	DEC1217
	104	Stopper A	DEC1306
	105	Socket holder (S)	DNF1248
	106	Socket holder (L)	DNF1247
	107	Lamp bracket (L)	DNF1243
	108	Lamp bracket (R)	DNF1244
	109	CB cushion	DEC1107
	110	Cabinet	SMM1368
	111	Tape A	DED1042
	112	Reflection plate	DNF1249
	113	Stopper B	DEC1307
	114	Grill assembly	SMG1203
	115	Cord reel	SNA1294

4.1.2 EXTERIOR (2)

Parts List

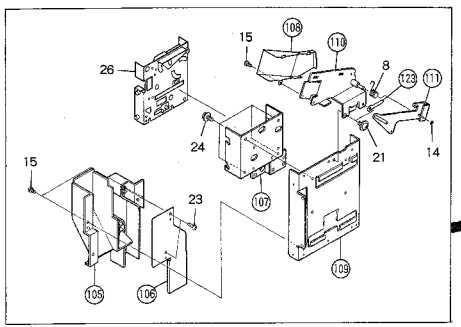
Mark	No.	Description	Part No.
	1	Plate	DNK1627
	2	Rail	SNA1235
	3	Speaker (Woofer)	25-803A
	4	Micro switch	DSF1001
	5	O ring	DBH1125
	6	Reinforced plate	SNA1220
	7	Caster A	DXB1022
	8	Caster B	DXB1023
⚠	9	Connection cord	DDE1034
	10	Cord with pin plug	PDE1065
	11	MB fixing plate	DNF1231
	12	E ring ϕ 3	YE30FUC
	13	Screw	BBZ30P060FMC
	14	Screw	AMZ40P080FMC
	15	• • • • •	
	16	Screw	TNC35P140FZK
	17	Screw (3.5 × 12mm)	DBA1007
	18	Screw	PMH20P100FMC
	19	Screw	SBA1068
	20	Screw	PMB50P300FMC
	21	Screw	SBA-194
	22	Plastic rivet	DEC-176
	23	P.C.B cover	DEC1426
◉	24	BRAN	DWX1245
	25	R pin	Z33-012

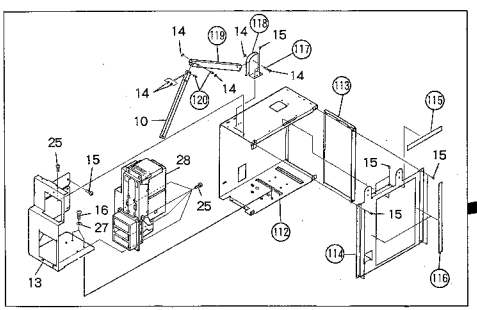
Mark	No.	Description	Part No.
	101	Top door stay	DND1106
	102	Door SW cam	DNH1221
	103	Door SW holder assembly	DXB1230
	104	Cabinet	SMM1368
	105	Airway cover	SNC1079
	106	Tape B	DED1043
	107	P.C.B holder	PNW2029
	108	Cord holder	VNF-005
	109	Cord holder	DNF1128
	110	Cord clamper	SNE1010
	111	Cord clamper	SNE1009
	112	Earth plate	SNA1224

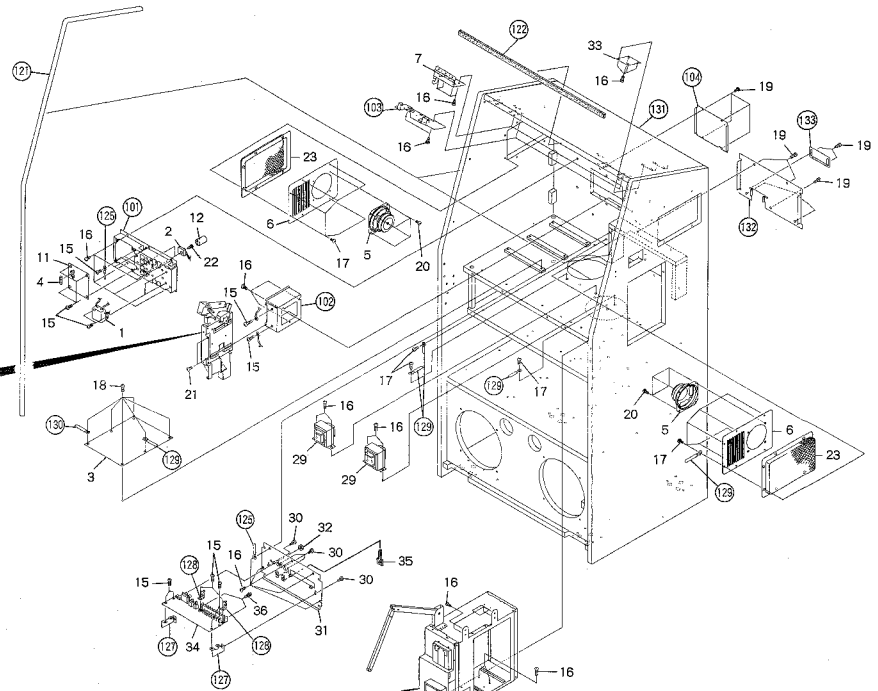


Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

4.1.3 EXTERIOR (3)







Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

Parts List

Mark	No.	Description	Part No.
⚠	1	Ballast	DTH1114
⚠	2	Glow lamp socket	DKK1009
◉	3	Network assembly	SWN1272
⚠	4	Fuse (FU601, 2A)	DEK1016
	5	Speaker (Mid - range)	10 - 757A
	6	Speaker holder	SNB1038
	7	Hinge	DXB1193
	8	CA spring	DBH1035
	9	Protection net	SNC1078
	10	Door stay B	DND1022
◉	11	LAMP	DWX1111
⚠	12	Glow lamp	DEL1007
	13	Bill holder (F)	DNH1322
	14	E ring ϕ 3	YE30FUC
	15	Screw	BBZ30P060FMC
	16	Screw (3.5 × 12mm)	DBA1007
	17	Screw	TNC35P140FZK
	18	Screw	AYC30P250FMC
	19	Screw	AMZ30P060FZK
	20	Screw	BSZ40P060FZK
	21	Screw	BBZ40P080FMC
	22	Screw	BBZ30P080FMC
	23	Screw	BPZ30P080FCU
	24	Screw	PMB40P080FMC
	25	Screw	AMZ40P080FMC
	26	Coin acceptor	DXB - 134
	27	Washer	WA42F120M100
	28	Bill acceptor	DXB1363
⚠	29	Power transformer (T3, T4)	DTX1003
	30	Screw	BBZ30P080FZK
	31	External panel	DNC1207
	32	Nut	NKX2FUC
◉	33	COTM	DWX1249
◉	34	EXTB	DWK1032
	35	Band	DEC1043
	36	Screw	PMB30P140FMC

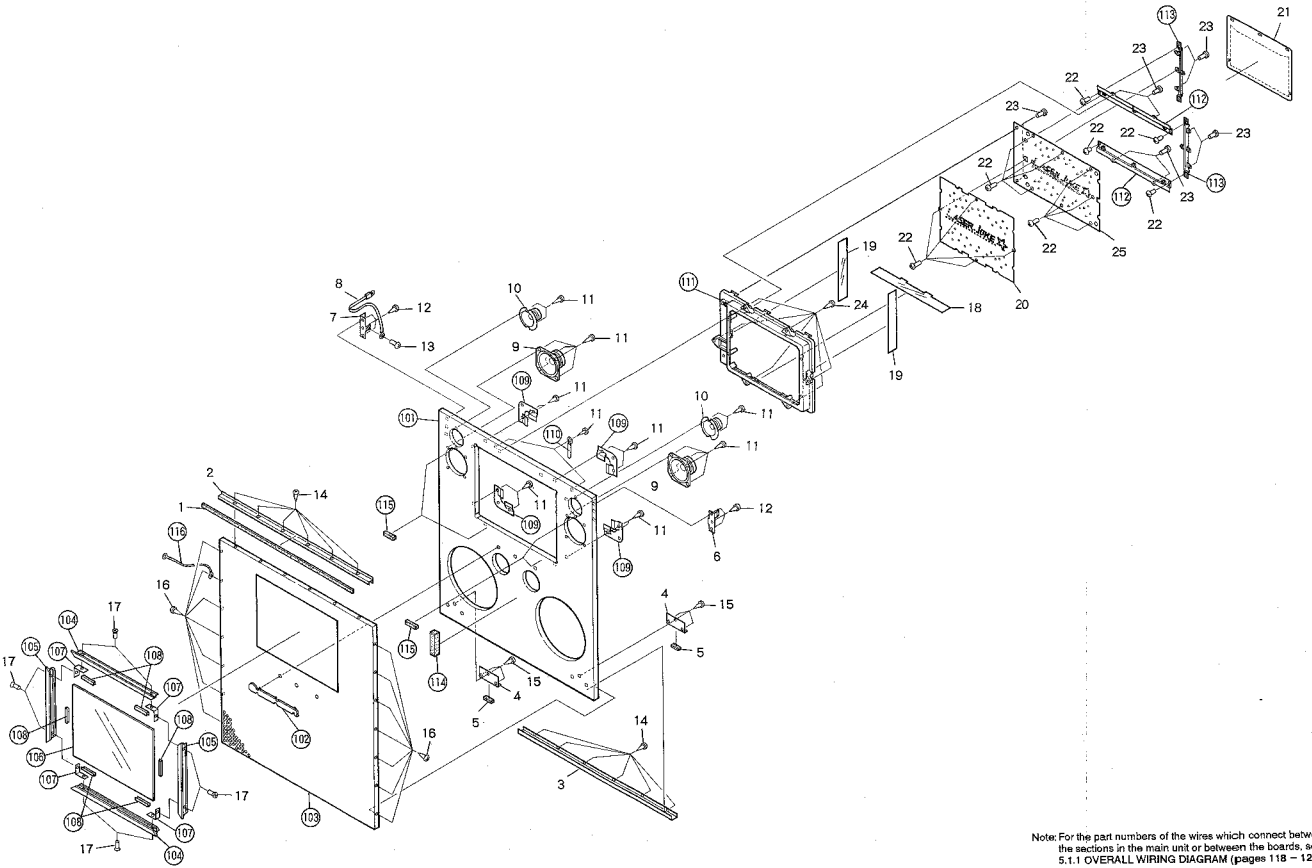
Mark	No.	Description	Part No.
	101	Stay A	DND1074
	102	CA holder A	DNF1235
	103	Hinge holder	DNF1229
	104	Rear plate	DNF1303
	105	Coin guide (A)	DNK1614
	106	Coin guide cover	DNH1334
	107	Channel	DXB1364
	108	Insertion guide A	DNH1128
	109	CA holder B	DNF1236
	110	HL holder assembly	DXB1198
	111	CH lever assembly	DXB1199
	112	Bill holder (L)	DNH1323
	113	Bill holder (RE)	DNH1325
	114	Bill holder (R)	DNH1324
	115	Tape C	DED1044
	116	Tape D	DED1045
	117	DS shaft A	DLA1296
	118	DS base	DND1053
	119	Door stay A	DND1088
	120	DS shaft B	DLA1125
	121	Ornament sash	SAP1073
	122	Shield packing (A)	DEC1216
	123	Cord holder	VNF - 069
	124	• • • • •	
	125	Cord holder	VNF - 005
	126	• • • • •	
	127	Terminal holder B	DNF1281
	128	Terminal stay	DNH1607
	129	Cord clamper A	SNE1009
	130	Cord clamper B	SNE1010
	131	Cabinet	SMM1368
	132	Rear cover	DNH1601
	133	Shutter	DNH1602

4.1.4 GRILL BOARD SECTION

Parts List

Mark	No.	Description	Part No.
	1	Packing	SEB1068
	2	Sash	SNH1017
	3	Sash	SNH1018
	4	Door hinge	SNB1041
	5	Cushion	SEB1072
	6	Catch plate L	SNB1039
	7	Catch plate R	SNB1040
	8	Safety belt	SEW1014
	9	Speaker (Mid-range)	10-757A
	10	Speaker (Tweeter)	D66-AP45-52L
	11	Screw	TNC35P140FZK
	12	Screw	SBA1061
	13	Screw	PMA60P100FMC
	14	Screw	RWC31P200FUC
	15	Screw	PMB50P160FZK
	16	Screw	CWC31P200FZK
	17	Screw	CMZ30P060FMC
	18	Mirror (A)	DAP1037
	19	Mirror (B)	DAP1038
	20	Mirror (R)	DAP1036
	21	Illumination cover	DEC1420
	22	Screw	BBZ30P060FMC
	23	Screw	BPZ30P080FUC
	24	Screw	DBA1008
◉	25	ILLM	DWG1262

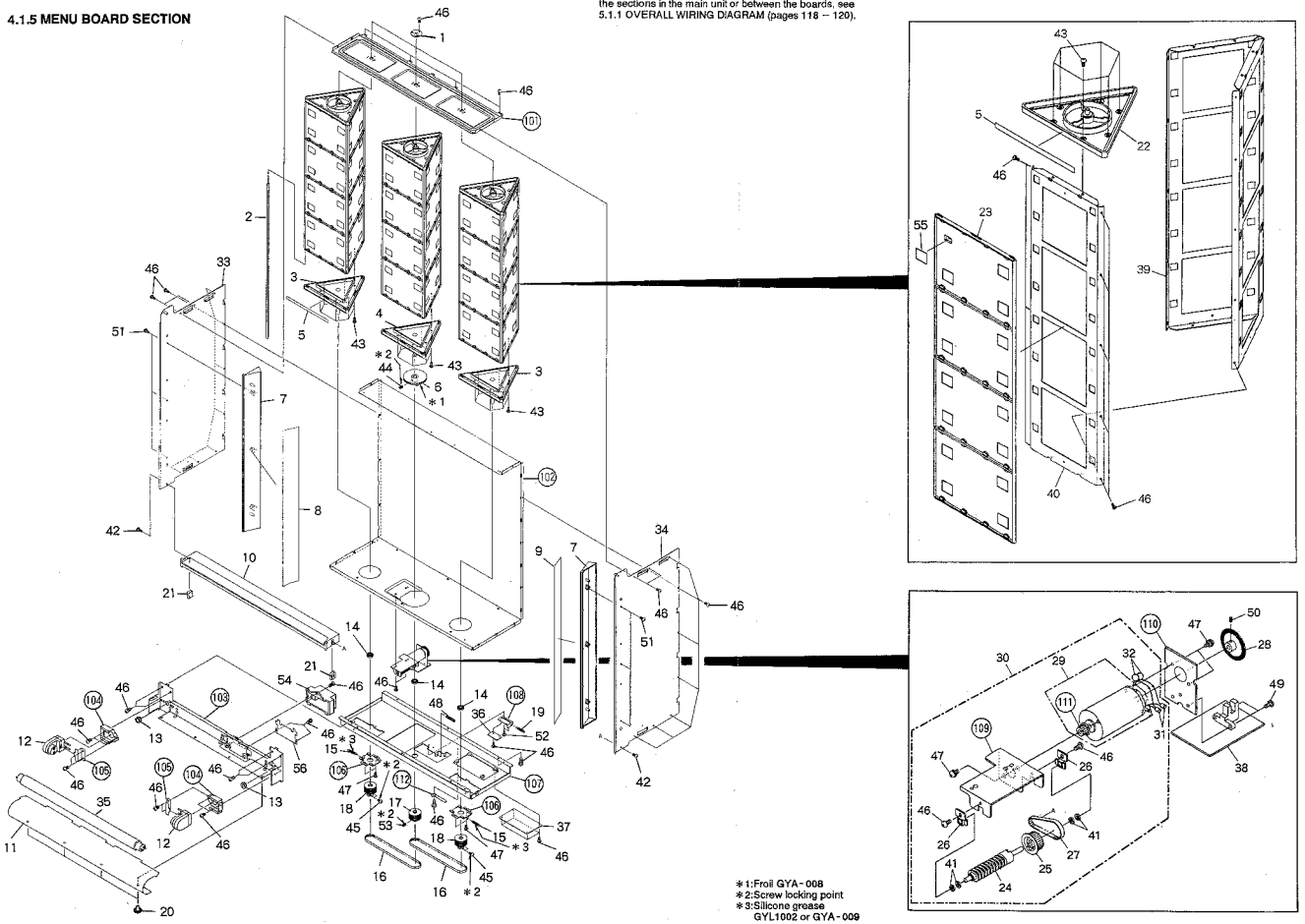
Mark	No.	Description	Part No.
	101	Grill board	SMA3115
	102	Badge	SAM1231
	103	Punching net	SNC1106
	104	Sash A	SNH1022
	105	Sash B	SNH1023
	106	Glass plate	SLG1071
	107	Frame fixing holder	SNA1293
	108	Cushion	SEB1105
	109	Clamp holder	SBK1002
	110	Cord holder	SNE1009
	111	Illumination base	DNK2172
	112	Illumination stay (A)	DND1103
	113	Illumination stay (B)	DND1104
	114	Cushion	SEB1074
	115	Net spacer	SEB1104
	116	Earth lag assembly	SDF1026



Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

4.1.5 MENU BOARD SECTION

Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).



*1:Froil GYA-008
*2:Screw locking point
*3:Silicone grease GYL1002 or GYA-009

Parts List

Mark	No.	Description	Part No.
	1	Shaft holder	DNK1633
	2	Corner edge	DNF1257
	3	Menu cap (L)	DNK1629
	4	Menu cap (M)	DNK1630
	5	Menu sheet	DEC1252
	6	Worm wheel	DNK1621
	7	Side ornament plate	DNK1626
	8	Side ornament plate sheet (L)	DEC1250
	9	Side ornament plate sheet (R)	DEC1251
	10	Ornament plate	DNK1627
	11	Illumination sheet	DEC1224
⚠	12	Fluorescent lamp socket (upper)	DKK1006
	13	Bushing	DEC1220
	14	Bearing	DXB-108
	15	Tension spring (under)	DBH1107
	16	Synchro belt	DMS1012
	17	Center pulley	DNK1622
	18	Synchro pulley	DNK1623
	19	Adjustment spring	DBH1108
	20	Plastic rivet	DEC-176
	21	Speed nut	VBN-002
	22	Menu cap (U)	DNK1632
	23	Menu	DNK1628
	24	Worm gear	DLA1300
	25	Pulley	DNK1620
	26	Worm shaft holder	DNK1624
	27	S2M timing belt	DMS1006
	28	Encoder disc assembly	DXB1160
	29	Motor	DXM1033
	30	Motor assembly	DXX1368
	31	C702, C704	CEANP010M50
	32	C701, C703	CGDYX104M25
	33	Side frame (L)	DNA1070
	34	Side frame (R)	DNA1071
	35	Fluorescent lamp	DEL-110
◉	36	POSS	DWX1110
◉	37	ROTA	DWX1109
◉	38	CNTB	DWX1132
	39	Triangle frame (L)	DNH1328
	40	Triangle frame (S)	DNH1329
	41	Washer	WA42D080D050
	42	Screw	BBZ30P080FZK
	43	Screw	BBZ40P080FMC
	44	Screw	ZMD40H080FBT
	45	Screw	SMZ30H120FBT
	46	Screw	BBZ30P060FMC
	47	Screw	PMH30P060FMC
	48	Screw	SMZ30H200FMC
	49	Screw	BMZ26P060FMC
	50	Screw	ZMD26H030FBT
	51	Screw	BPZ30P080FCU
	52	Screw	AMZ30P060FZK
	53	Screw	ZMD40H080FBT
	54	FL cover	DNK1478
	55	Menu number label	DEC1347
◉	56	LACN	DWX1248
	101	Top cover	DNA1065
	102	Back frame	DNA1064
	103	Lamp stay	DNF1380
	104	Socket holder (L)	DNF1247
	105	Socket holder (S)	DNF1248
	106	Tension plate (under)	DNF1251
	107	Under frame	DNA1066
	108	Adjustment plate	DNF1241
	109	Motor holder	DNF1240
	110	Sensor holder	DNF1273
	111	Motor pulley	DNK1619
	112	Cord holder	VNF-005

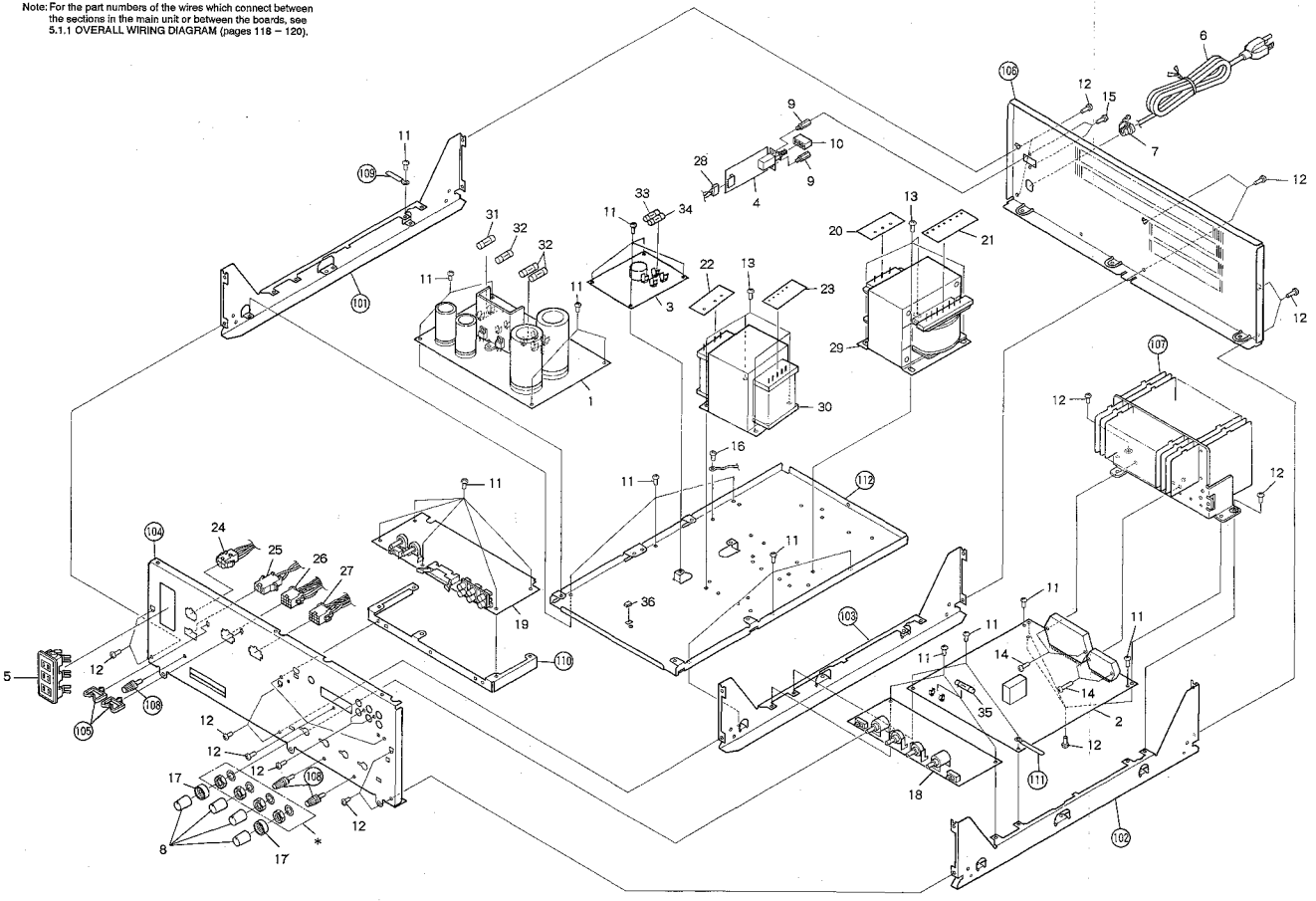
4.1.6 AMP SECTION

Parts List

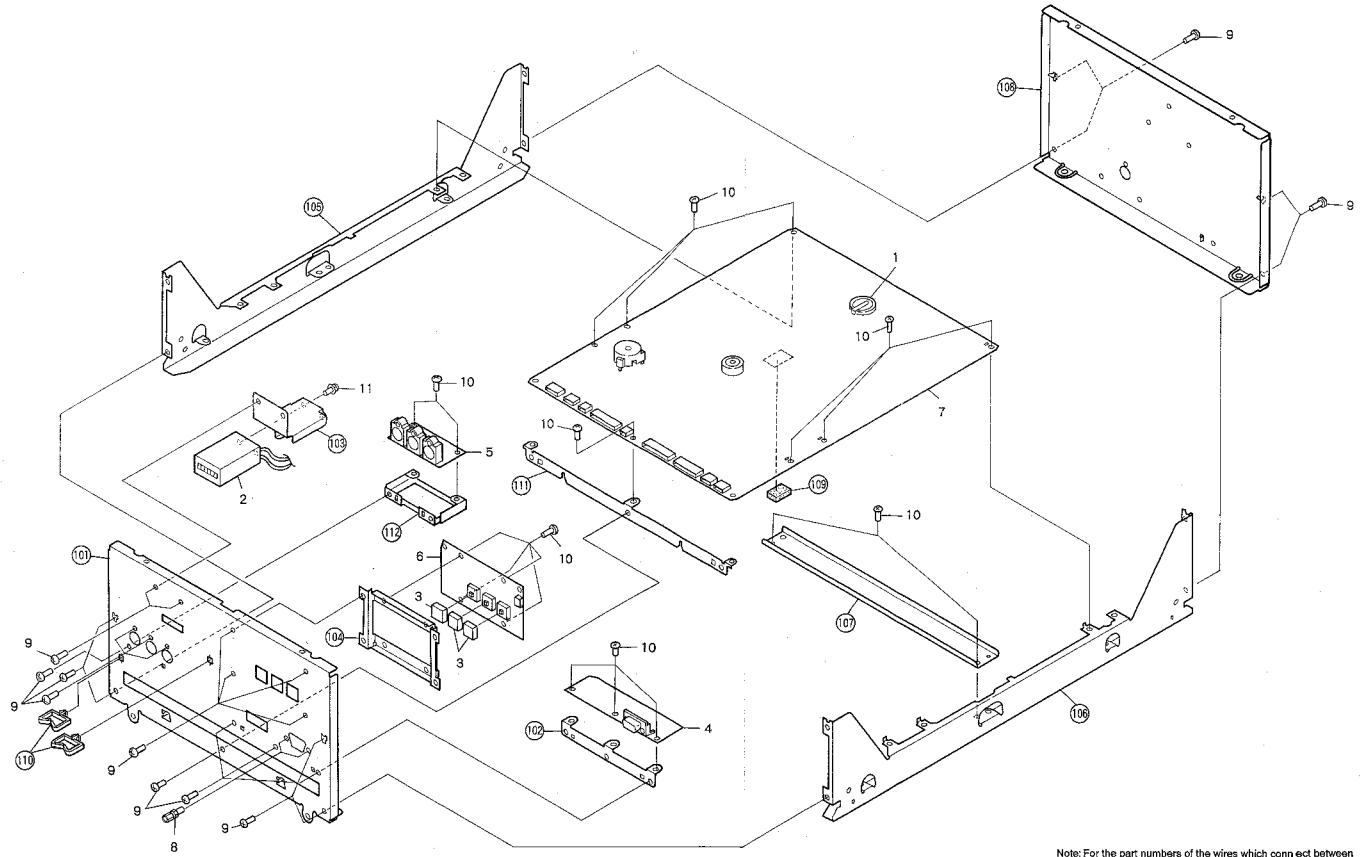
Mark	No.	Description	Part No.
◉	1	POWB	DWR1103
◉	2	PAMP	DWH1008
◉	3	ACIN	DWR1108
◉	4	PSWB	DWS1163
⚠	5	3P AC outlet	AKP-504
⚠	6	AC power cord	DDG1025
⚠	7	Strain relief	VEC-201
	8	VR knob B	RAC1211
	9	Staddle	DLA-177
	10	Push knob	DAC1107
	11	Screw	BBZ30P060FMC
	12	Screw	BBZ30P080FZK
	13	Screw	BBZ40P080FMC
	14	Screw	BBZ30P140FMC
	15	Screw	AMZ30P060FZK
	16	Screw	PMB40P080FMC
	17	Knob	DAA1062
◉	18	TCMX	DWK1031
◉	19	SSLC	DWK1033
◉	20	MTRP	DWR1109
◉	21	MTRS	DWR1110
◉	22	STRP	DWR1111
◉	23	STRS	DWR1112
	24	Connector assembly	DKP2241
	25	Connector assembly	DKP1659
	26	Connector assembly	DKP2243
	27	Connector assembly	DKP2244
	28	Connector assembly	DKP1714
⚠	29	Power transformer (AC120V)(T1)	DTT1064
⚠	30	Power transformer (AC120V)(T2)	DTT1065
⚠	31	Fuse (FU301, 1.25A)	DEK1013
⚠	32	Fuse (FU302~FU304, 1.6A)	DEK1015
⚠	33	Fuse (FU752, 3A)	DEK1018
⚠	34	Fuse (FU751, 6A)	DEK1022
⚠	35	Fuse (FU501, 1.5A)	DEK1014
	36	Spacer	DEC1316

Mark	No.	Description	Part No.
	101	Side frame L	DND1057
	102	Side frame R	DND1058
	103	Center frame	DND1059
	104	Front panel A	DNB1037
	105	Wire clip	DEC1157
	106	Rear panel A	DNC1205
	107	Heat sink	DNG1046
	108	Earth terminal	DKE-102
	109	Cord holder	VNF-005
	110	TCMX holder	DND1105
	111	Cord holder	VNF-069
	112	Transformer frame	DND1060

Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).



4.1.7 COMMANDER SECTION



Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

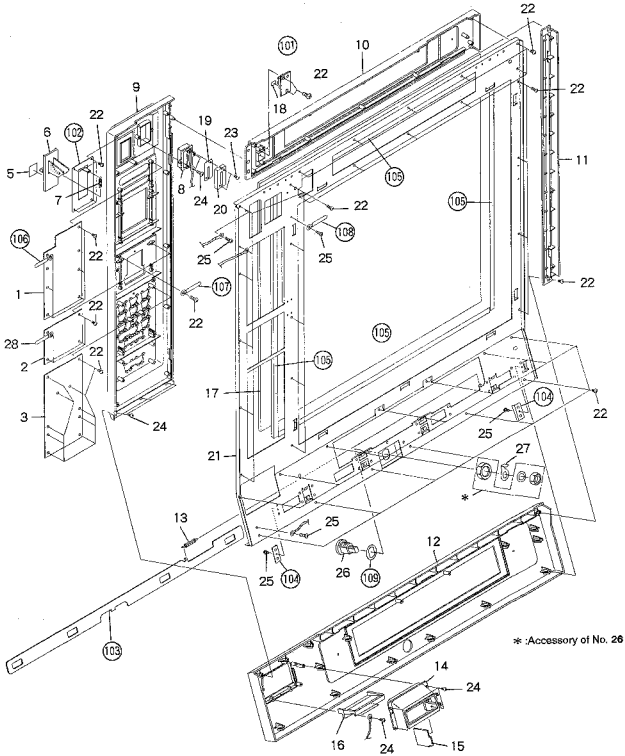
Parts List

Mark	No.	Description	Part No.
⚠	1	Lithium batteries	DEM1001
	2	Electromagnetic counter	DAW1011
	3	Push button	DAC-116
◉	4	RSSB	DWX1243
◉	5	CRJB	DWX1168
◉	6	OPER	DWS1156
◉	7	CONT	DWG1250
	8	Bolt	DBA1038
	9	Screw	BBZ30P080FZK
	10	Screw	BBZ30P060FMC
	11	Screw	PMB30P050FCU
	101	Front panel B	DNB1037
	102	P.C.B holder A	DNF1312
	103	Counter holder	DNF1254
	104	P.C.B holder	DNF1092
	105	Side frame L	DND1057
	106	Side frame R	DND1058
	107	Reinforced frame	DND1061
	108	Rear panel B	DNC1206
	109	Cushion	DEB1125
	110	Wire clip	DEC1157
	111	P.C.B holder C	DNF1314
	112	Terminal holder C	DNF1282

4.1.8 TOP DOOR SECTION

Parts List

Mark	No.	Description	Part No.
◉	1	MESS	DWG1261
◉	2	DISP	DWG1260
◉	3	KEYB	DWS1101
	4	• • • • •	
	5	Coin-return lever sheet B	DAH1184
	6	Coin-return lever	DAD1001
	7	Coin-return lever spring	DBH1033
	8	Coin insertion hole	DNS1044
	9	Operation panel	DNK1609
	10	Top door panel (upper)	DNK1610
	11	Top door panel (side)	DNK1612
	12	Top door panel (under)	DNK1611
	13	Lock spring	DBH1034
	14	Bill insertion panel	DNK1613
	15	Transparent panel	DEC1215
	16	Bill insertion hole	DNS1084
⚠	17	Menu glass	DAN1010
	18	IR filter	DEC1356
	19	Coin slit	DNH1332
	20	Coin spacer	DNK1635
	21	Top door base	DNA1061
	22	Screw	BPZ30P080FCU
	23	Screw	PMH30P120FMC
	24	Screw	IPZ30P080FMC
	25	Screw	BBZ30P060FMC
	26	Lock	DXB1103
	27	Lock cancellation plate	DNH1126
	28	Cord holder	RNH-184
	101	SENS	DWX1113
	102	Coin-return lever fixing plate	DNF1238
	103	Top door lock plate	DNH1371
	104	Lock plate stopper	DNH1321
	105	Glass sash	DEC1213
	106	Cord holder	DNF1128
	107	Cord holder	VNF-005
	108	Cord holder	VNF-069
	109	Plate B	DEC1214



Note: For the part numbers of the wires which connect between the sections in the main unit or between the boards, see 5.1.1 OVERALL WIRING DIAGRAM (pages 118 – 120).

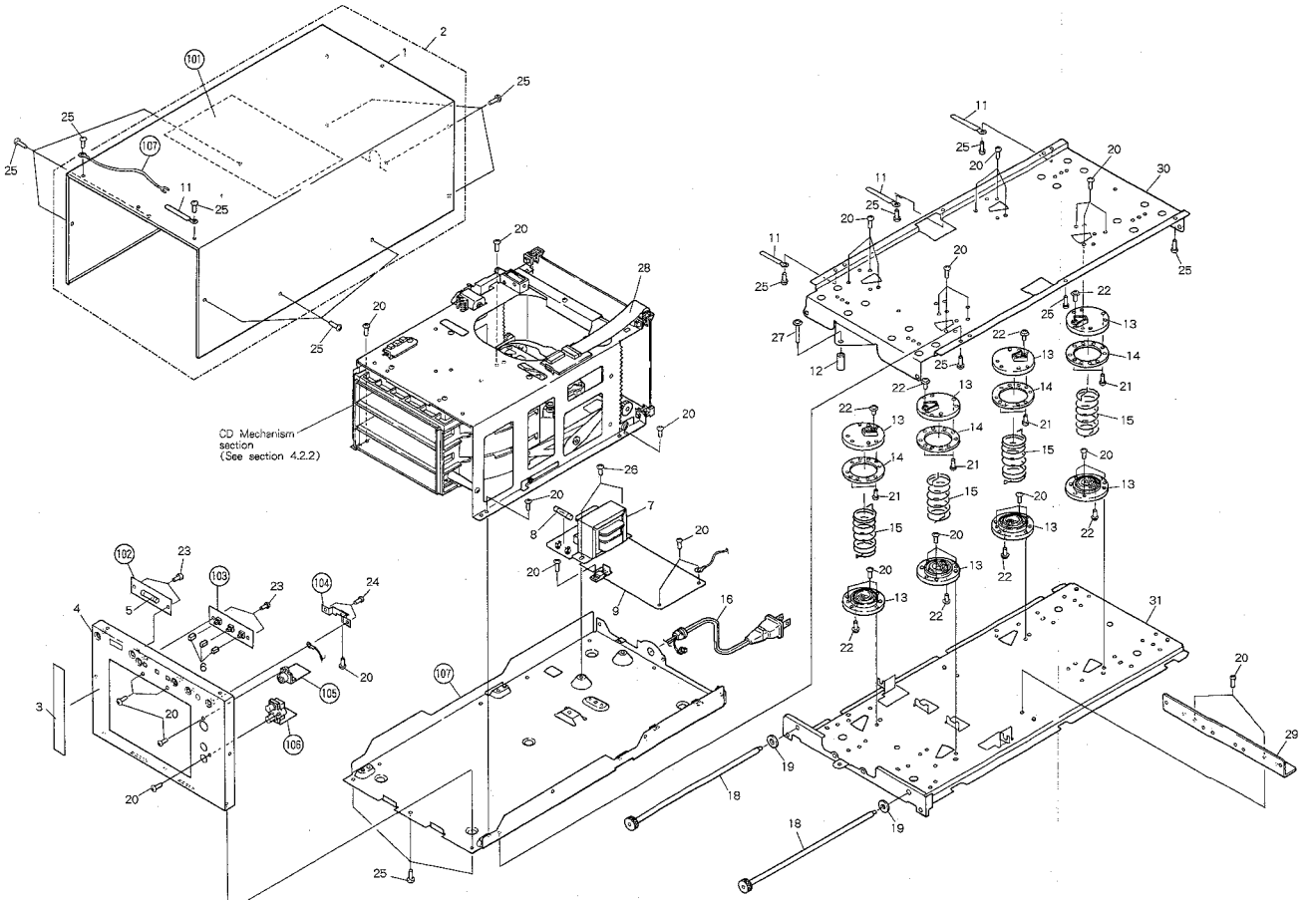
4.2 CD SECTION

4.2.1 EXTERIOR

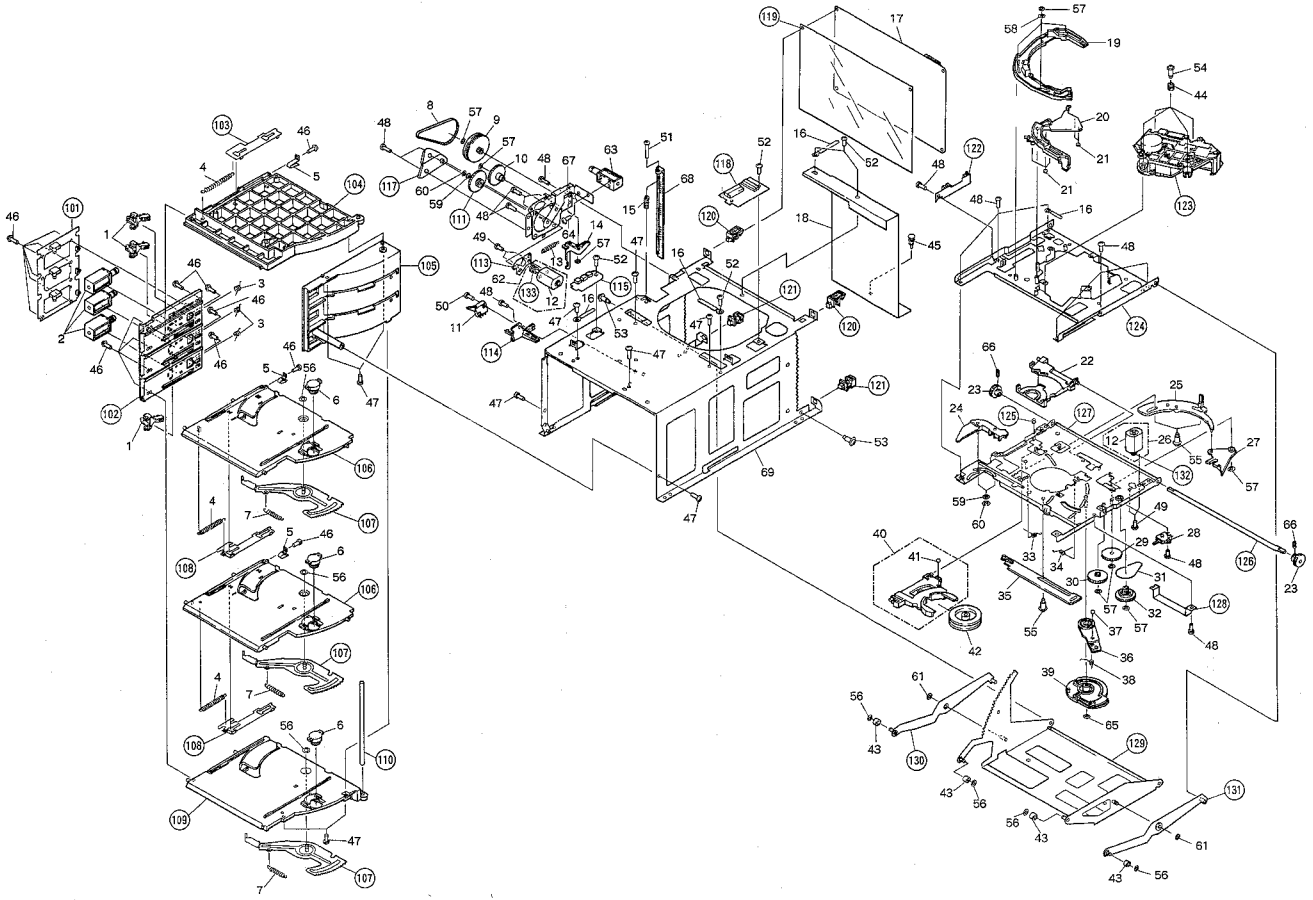
Parts List

Mark	No.	Description	Part No.
	1	Bonnet	DNE1083
	2	Bonnet assembly	DXX1357
	3	Label A	DRW1338
	4	Front panel	DNB1012
	5	Hour meter	VCX-006
	6	Push button	DAC1196
⚠	7	Power transformer (T201)	DTT1037
⚠	8	Fuse (FU201, 315mA)	REK-075
◉	9	ANLG	DWX1117
	10	• • • • •	
	11	Cord holder	RNH-184
	12	Collar	DLA1336
	13	SP holder	DNK1179
	14	Plate B	DNF1075
	15	Spring	DBH1105
⚠	16	AC power cord	DDG1026
	17	• • • • •	
	18	Lock shaft	DLA1337
	19	Rubber washer	DEB1123
	20	Screw	BBZ30P080FMC
	21	Screw	PMZ30P040FMC
	22	Screw	IPZ30P060FMC
	23	Screw	AMZ30P060FMC
	24	Screw	PMZ30P060FMC
	25	Screw	PDZ30P060FMC
	26	Screw	BBZ40P080FMC
	27	Screw	AMZ40P250FMC
	28	17P flexible cord	DDD1027
	29	Sipping angle	DNH1319
	30	Upper base	DNH1318
	31	Under base	DNH1317
	32	Chassis	DNA1077

Mark	No.	Description	Part No.
	101	Insulation plate B	DEC1210
	102	HRMB	DWX1133
	103	EKEY	DWS1103
	104	RMJB	DWX1134
	105	DJAK	DWX1118
	106	PJAK	DWX1119
	107	Earth lag assembly	DDX1048


CD Mechanism section (See section 4.2.2)

4.2.2 MECHANISM SECTION



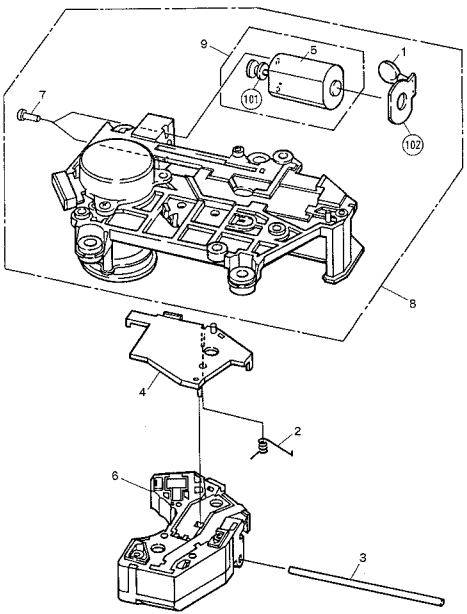
Parts List

Mark No.	Description	Part No.
1	Lock lever	DNK1566
2	Plunger	DXP1008
3	Lock spring	DBH1101
4	SM spring	PBH1015
5	Spring	DBK1028
6	Damper assembly	REC1005
7	Eject spring	PBH-465
8	Timing belt	DMS1011
9	Timing pulley	DNK1578
10	Gear E2	DNK1575
11	Slide switch	DSH1011
12	Motor (SELECT, LOADING)	PXM1002
13	Select spring	DBH1100
14	Select lever	DNK1579
15	Sensor spring	DBH1102
16	Cord holder	RNH-184
17	DEGT	DWX1116
18	Sheet	DEC1237
19	Cam	PNW1110
20	Upper tray	PNW1111
21	Cushion A	PED1001
22	Clamper holder B	DNK1581
23	Syncro gear	DNS1080
24	Turn drive lever	DNK1577
25	Clamper cam	DNK1574
26	Motor assembly	PYY1025
27	Clamper lever	DNK1573
28	Lever switch	DSK1001
29	Gear A	DNK1569
30	Gear B	DNK1570
31	Belt	DEB1104
32	Gear pulley	PNW1095
33	Clamper spring T	PBH1016
34	Clamper spring B	DBH1120
35	Drive plate	DNK1572
36	Drive lever	DNK1571
37	Steel ball ϕ 4	PBP-001
38	Tension spring	DBH1103
39	Main gear	DNK1568
40	Clamper holder T	PNW1107
41	Steel ball ϕ 3	PBP-009
42	Clamper	PNW1857
43	Roller	DLA1286
44	Floating rubber	PEB1014
45	Plastic revet	DEC-176
46	Screw	BPZ30P080FZK
47	Screw	BPZ30P100FMC
48	Screw	BSZ26P040FMC
49	Screw	PMZ20P030FMC
50	Screw	PMZ20P080FMC
51	Screw	BMZ26P120FMC
52	Screw	PCZ30P050FZK
53	Link screw	DBA1023
54	Floating screw	PBA1002
55	Screw	PBA-125
56	Washer	WT26D047D050
57	Washer	WT26D047D025
58	Washer	WA31D054D050
59	Washer	WA31D054D025
60	E ring	YE25FUC
61	Washer	WT31D054D050
62	Select motor assembly	DXX1358
63	Plunger	DXP1009
64	Screw	BMZ26P030FMC
65	Washer	WT31D054D013
66	Screw	ZMD26H040FBT
67	Gear angle	DNH1457
68	Sensor plate	DNK1567
69	Main chassis	DNA1056
101	MJSW	DWS1102
102	Side guide L	DNK1562
103	SM select A	DNH1299
104	Top guide	DNK1559
105	Side guide R	DNK1563
106	Center guide	DNK1560
107	Eject lever	DNH1298
108	SM select B	DNH1300
109	Bottom guide	DNK1561
110	Guide bar	DLA1287
111	Gear EF	DNS1081
112	• • • • •	
113	Motor base	DNH1302
114	Sensor holder	DNK1576
115	REJC	DWX1114
116	• • • • •	
117	Reinforced plate	DNF1311
118	FREC	DWX1115
119	Insulation plate A	DEC1209
120	Card edge spacer	DEC1211
121	Corner post	DEC1212
122	SENS	DWX1113
123	Servo mechanism assembly A	DXB1189
124	Upper cassis	DNA1054
125	Rubber tube	PEB1030
126	Synchro shaft	DLA1288
127	Sub cassis	DNA1055
128	Hold plate	DNH1294
129	Link plate	DNH1295
130	Link L	DNH1296
131	Link R	DNH1297
132	Motor pulley	DNK1580
133	Motor pulley	PLB-283

4.2.3 SERVO MECHANISM SECTION

Parts List

Mark	No.	Description	Part No.
	1	Semiconductive ceramic capacitor	CGDYX104M25
	2	Drive spring	PBH1008
	3	Guide bar	PLA1004
	4	Carriage plate	PNW1063
	5	Motor	PXM1002
	6	Pickup assembly	PWY1009
	7	Screw	PMZ20P030FMC
	8	Spindle motor assembly	DXX1361
	9	Motor assembly	PYY1025
	101	Motor pulley	PLB - 283
	102	Carriage M board	PNP1030

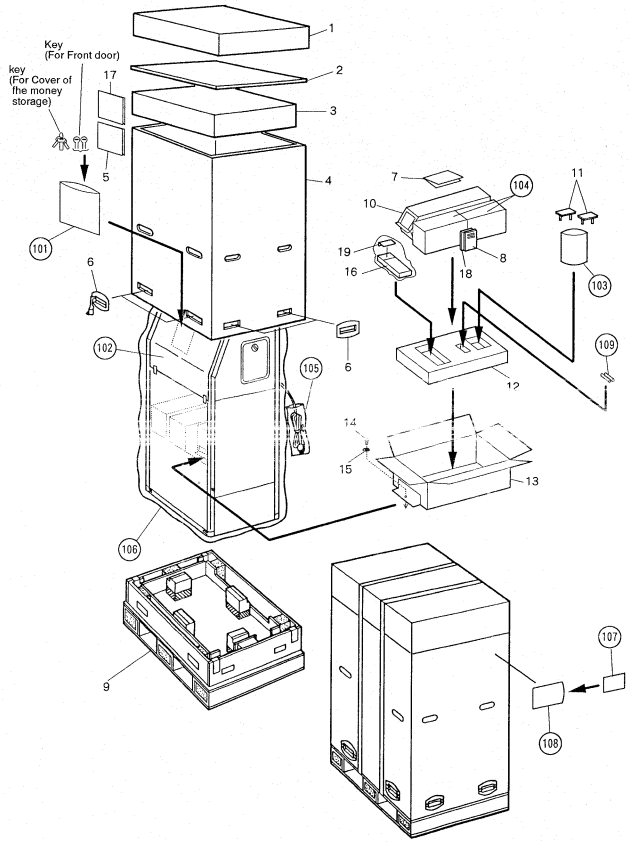


4.3 PACKING

Parts List

Mark	No.	Description	Part No.
	1	Packing cap	DHG1326
	2	Reinforced plate	SGK1366
	3	Pad assembly B	SHA1380
	4	Packing case	DHG1325
	5	Operating instructions (English)	DRB1064
	6	PP joint	AHG-204
	7	Menu number label	DEC1347
	8	Display plate (F)	DAH1611
	9	Pad assembly A	SHA1413
	10	Coin box assembly	DXB1229
	11	Coin insertion cover	DNK1671
	12	Pad	DHA1157
	13	Accessory case	DHK1055
	14	Screw	DBA1007
	15	Washer	WA42F120M100
	16	Remote control unit	DXR1018
	17	OWNER'S Manual	ARP2364
	18	Display Plate (A)	DAH1592
	19	Case C	DNK2307

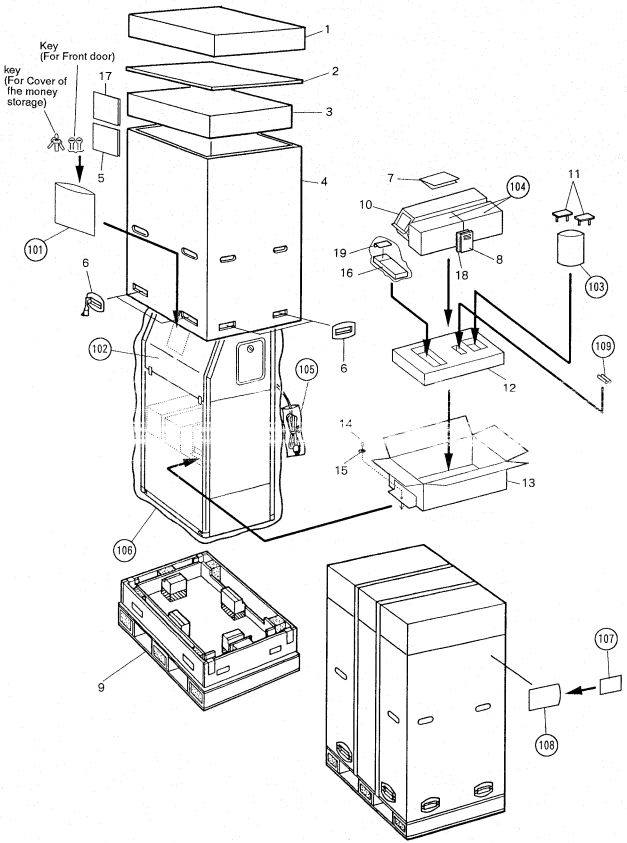
Mark	No.	Description	Part No.
	101	Vinyl bag	VHL-014
	102	Packing sheet	DHL1024
	103	Vinyl bag	Z21-006
	104	Magazine assembly	DXB1205
	105	Vinyl bag	VEG-012
	106	Packing bag	SHL1089
	107	Follow up card	DRY1032
	108	Vinyl bag	DHL1011
	109	Battery (R03, AAA)	VEM-022



Part No.

VHL-014
DHL1024
Z21-006
DXB1205
VEG-012

SHL1089
DRY1032
DHL1011
VEM-022



5. SCHEMATIC AND P. C. BOARDS DIAGRAMS

1. RESISTORS:
Indicated in Ω , 1/4W, 1/6W and 1/8W, ± 5% tolerance unless otherwise noted k;k Ω , M;M Ω , (F); ± 1%, (G); ± 2%, (K); ± 10%, (M); ± 20% tolerance.

2. CAPACITORS:
Indicated in capacity(μF)/voltage(V)unless otherwise noted p;pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
⏊ ;DC voltage(V)at play state.
⇦mA ;DC current at play state.
Value in( )is DC current at stop state.

4. OTHERS:
➡ ;Signal route.
⊘ ;Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of Identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

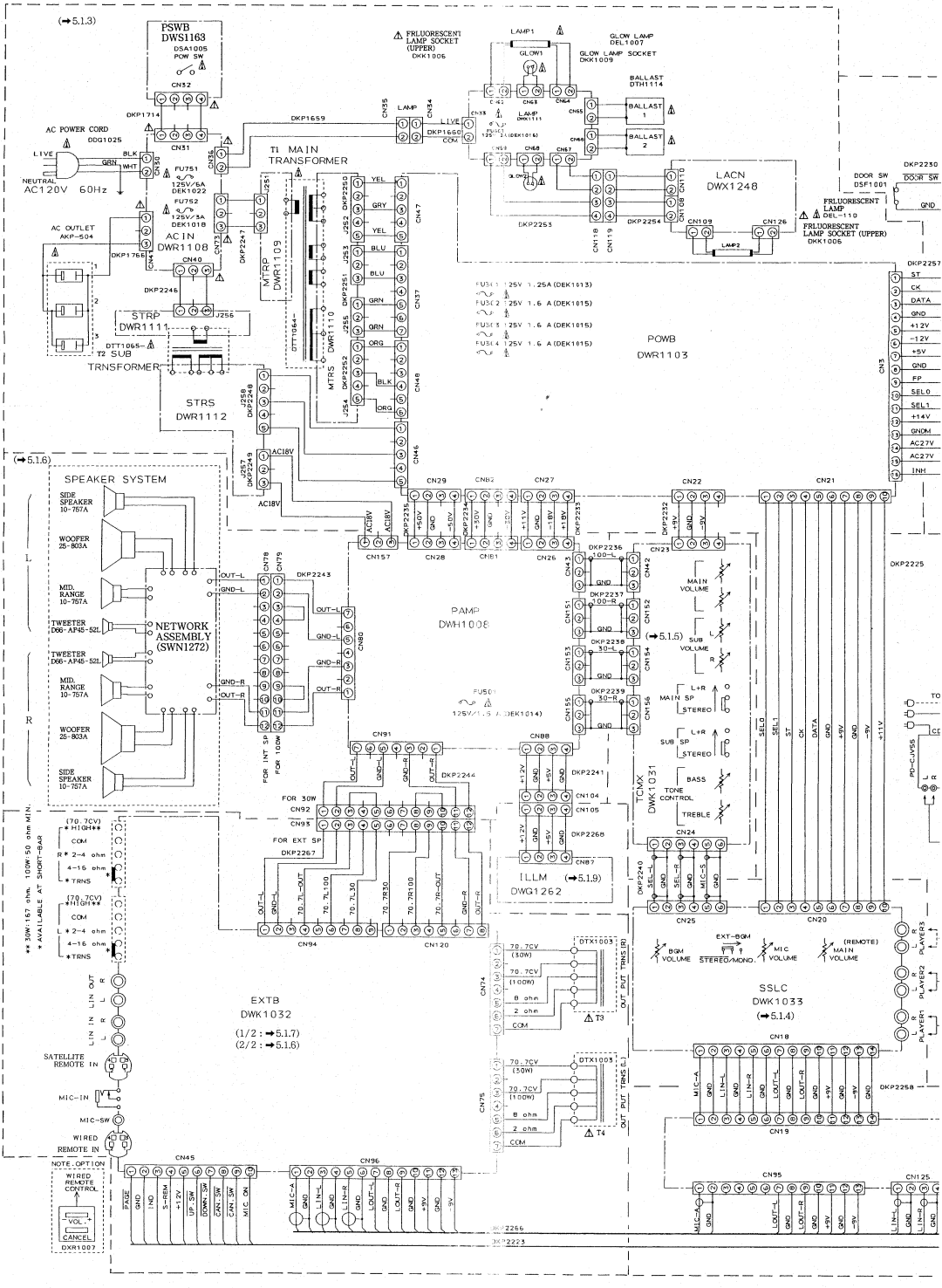
5. SWITCHES:(The underlined indicates the switch position)

● MAIN SECTION
OUTSIDE OF P.C.BOARDS
DOOR SW
KEYB
S301:1
S302:2
S303:3
S304:4
S305:5
S306:6
S307:7
S308:8
S309:9
S310:0
S311:
S312: CLEAR
S313:
S314: BEST HITS
S315:
S316: ROTATE MENU
PSWB
POWER SW ON — OFF
OPER
S301:TOC INITIALIZE
S302:ROTATE MENU
S303:SERVICE MODE
RSSB
S201:FUNCTION
TCMX
S211:STEREO/MONO (For high power)
S212:STEREO/MONO (For low power)
SSLC
S401:STEREO/MONO (For EXT input)

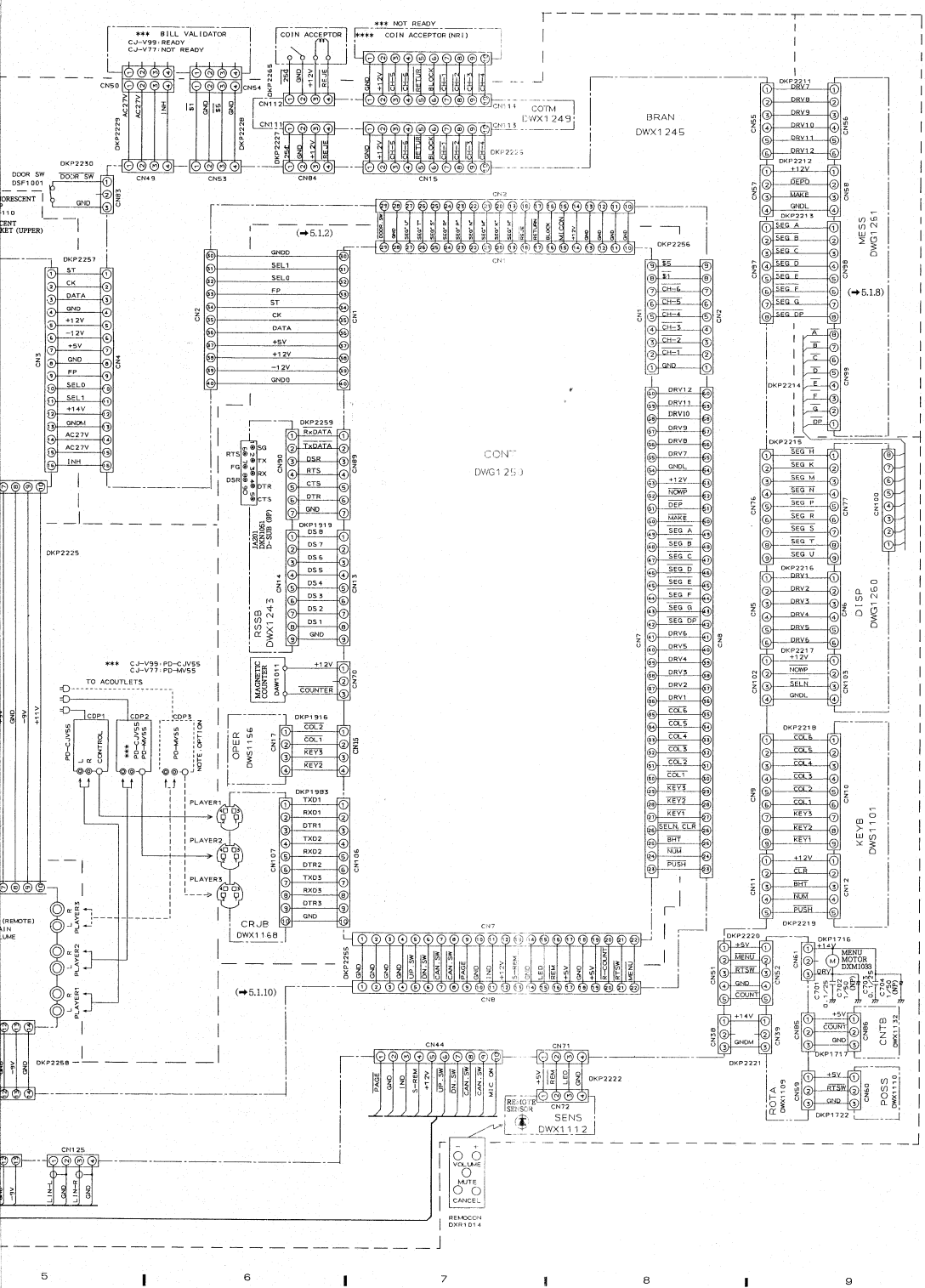
● CD SECTION
OUT SIDE OF P.C.BOARDS
DOWN LIMIT TRAY SW
CLAMP SW
IN SIDE SW
EKEY
S301:A
S302:B EJECT
S303:C
SENS
S901:UP LIMIT
MJSW
S801:1
S802:2 MJ LOCK
S803:3
S804:1
S805:2 MJ SENS
S806:3

5.1 MAIN SECTION

5.1.1 OVERALL WIRING DIAGRAM



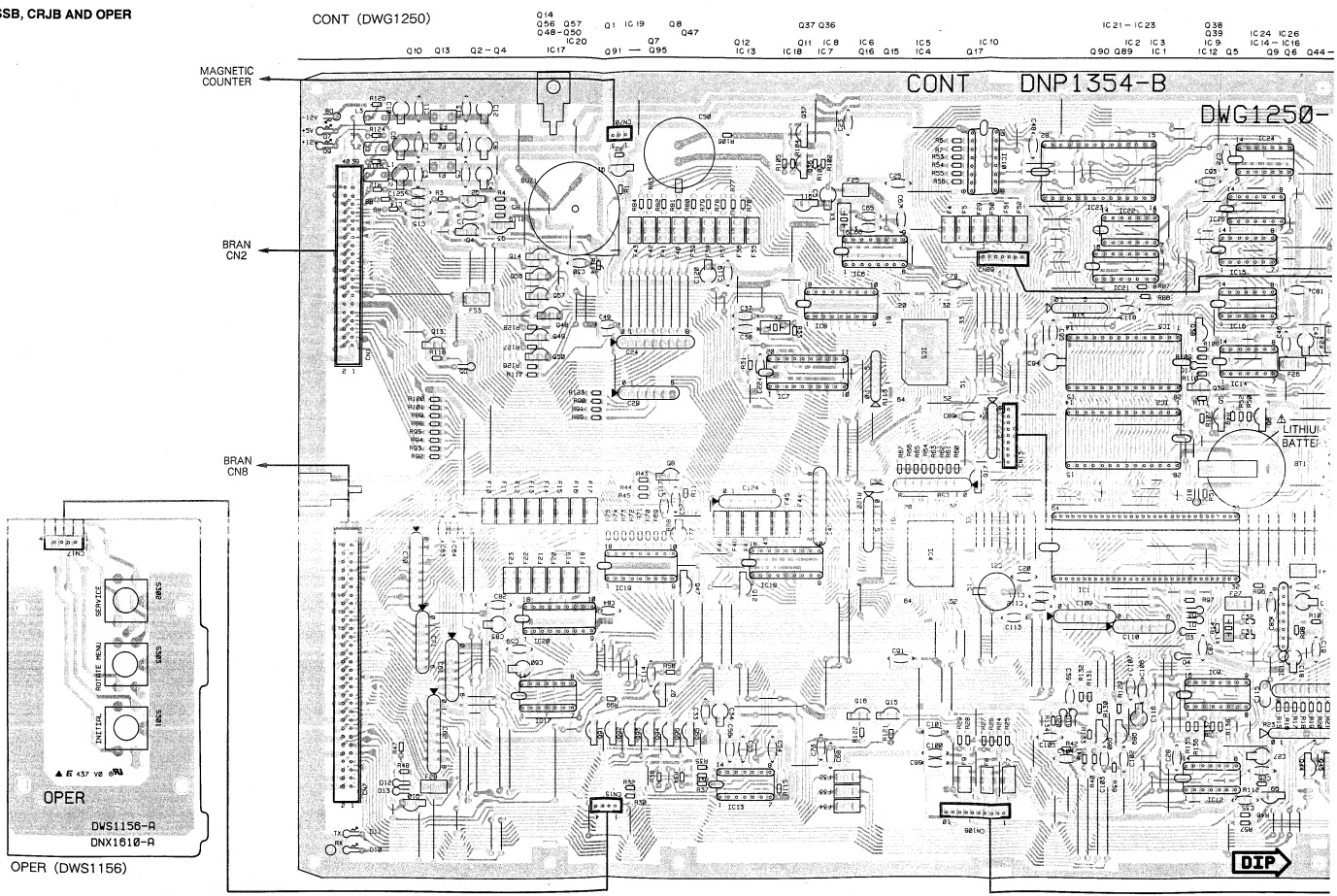
Note : (➡□-□) shows the location number.

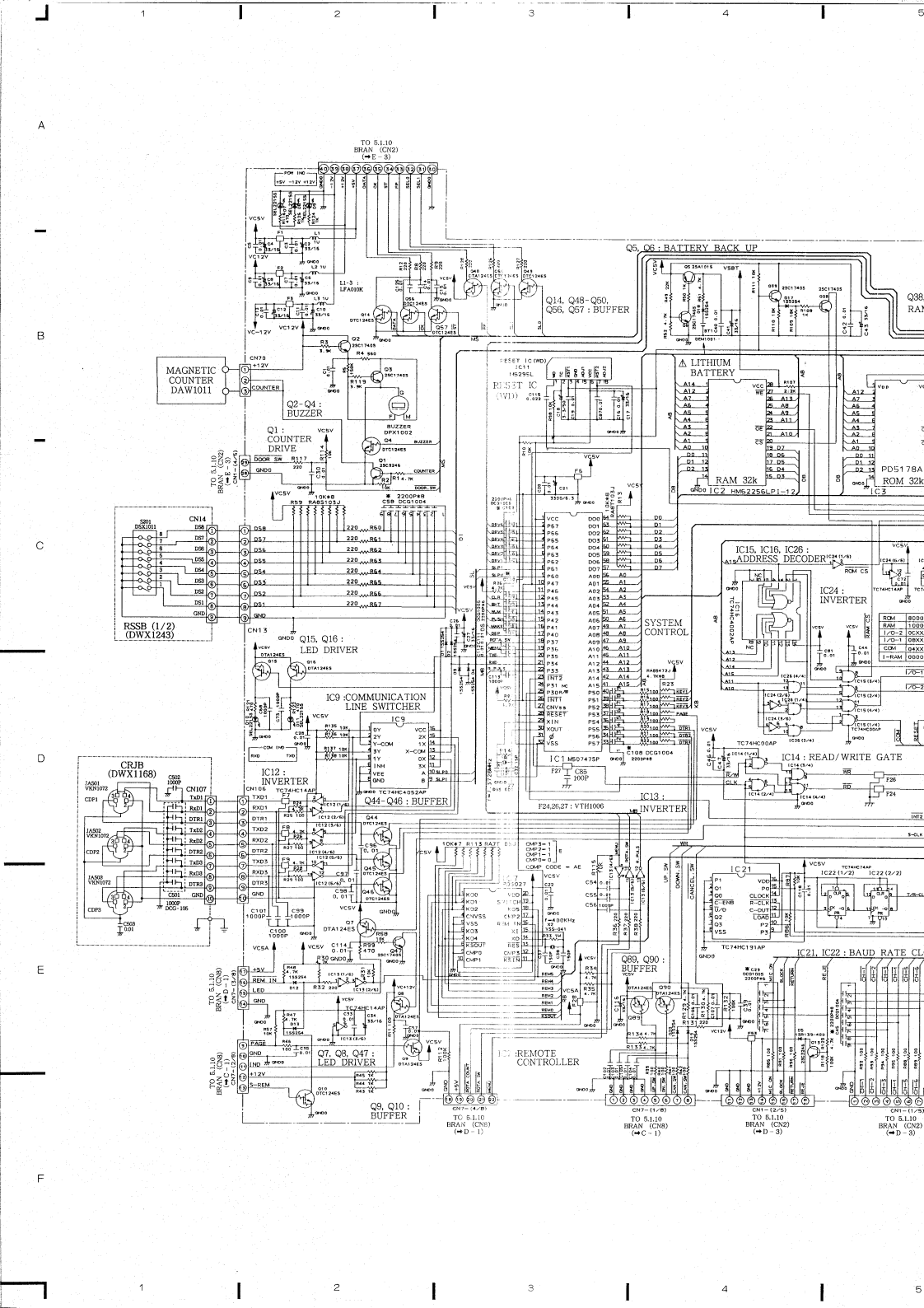


This P.C.B. connection diagram is viewed from the foil side.

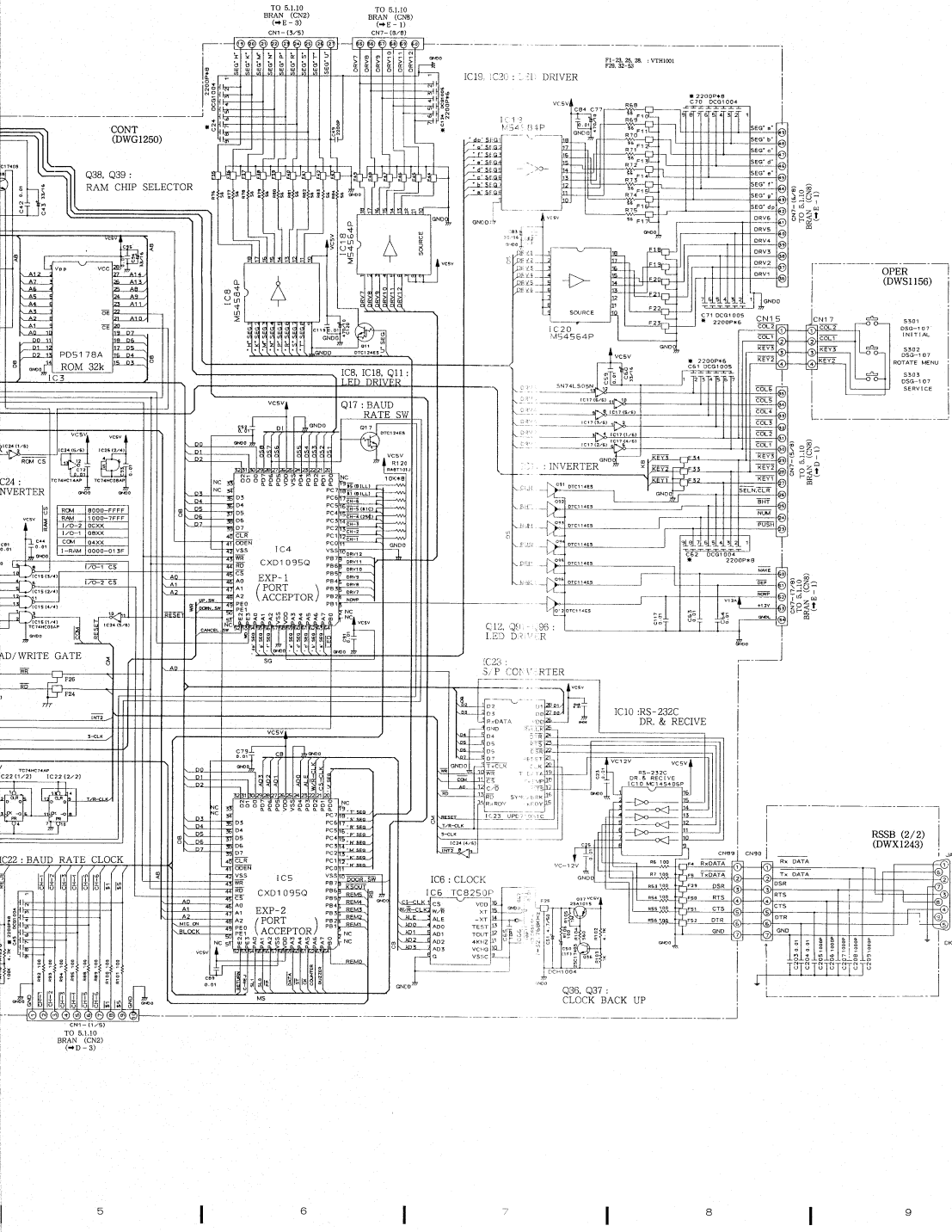
DW41224-B
CONT (DW41250)
OPER (DW41186)
DW41126-A
DX41819-A
MAGNETIC RETAINING
BRAIN CN3
BRAIN CN8
OTP
MULTI TRANSMITTER
INITIAL
ROTATE MEMO
SERVICE
SW25
SW24
SW23

5.1.2 CONT, RSSB, CRJB AND OPER

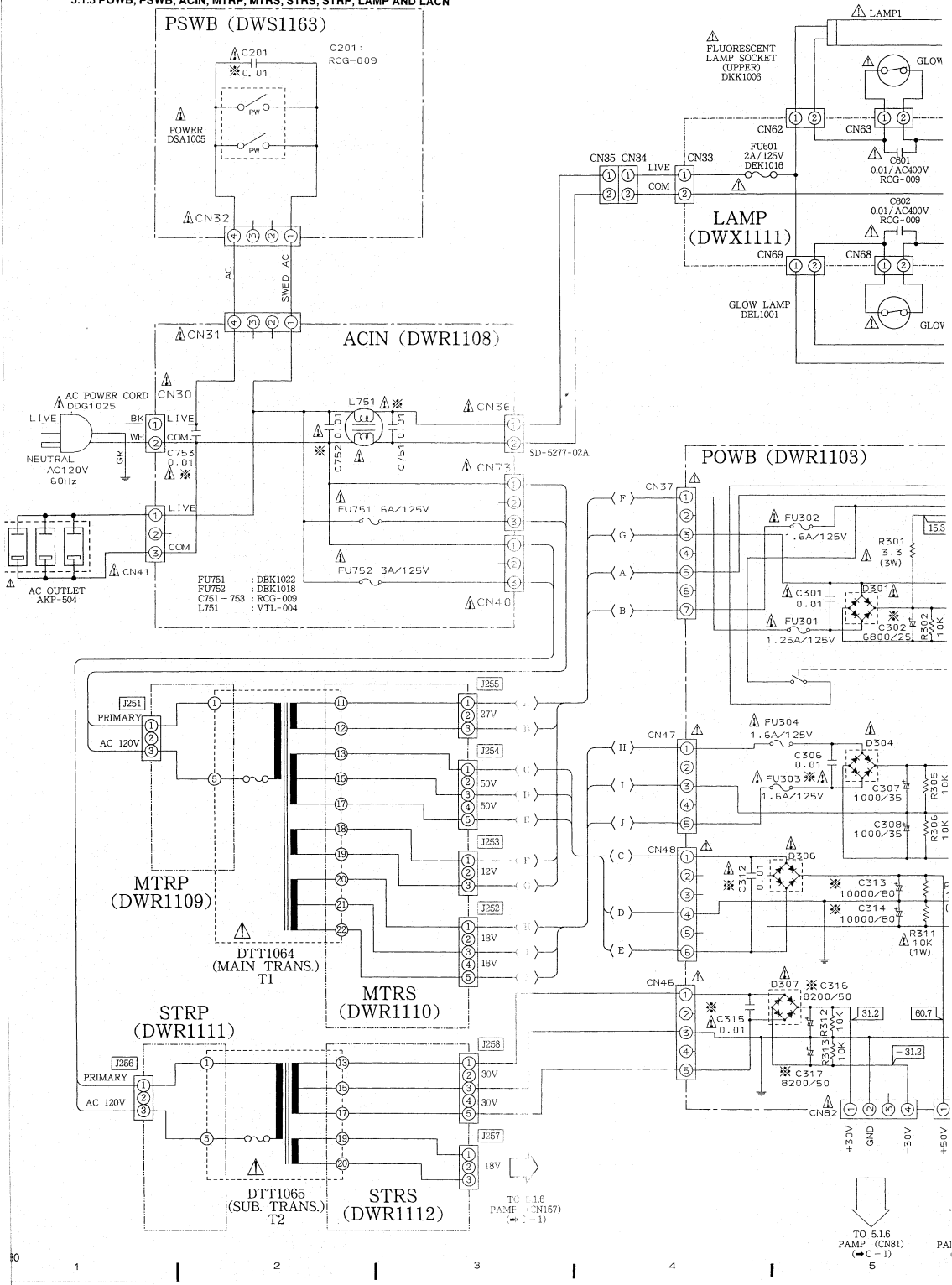


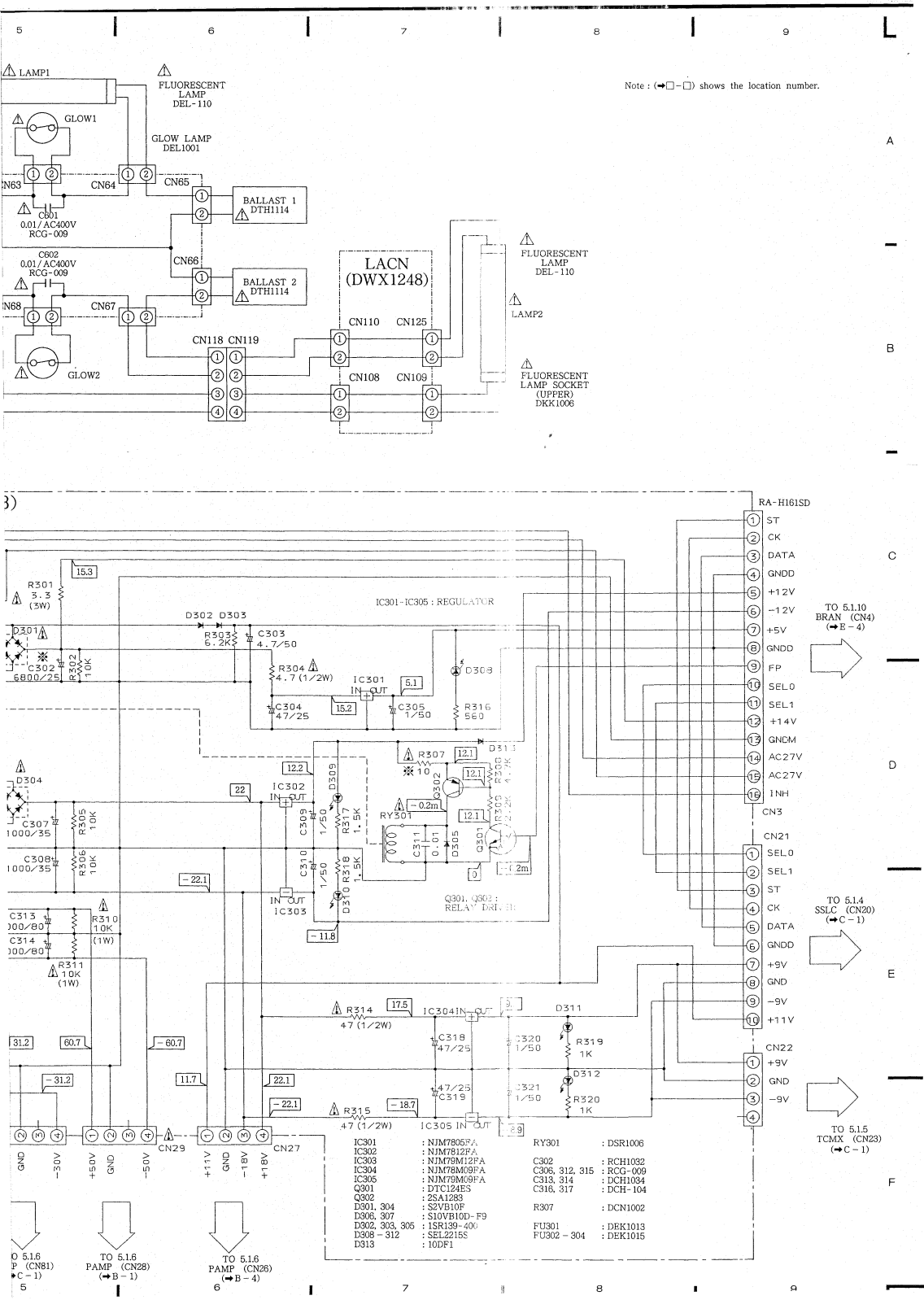

TO 5.1.10 BRAN (CN2) (➡E - 3)
Q5, Q6 : BATTERY BACK UP
Q14, Q48~Q50, Q56, Q57 : BUFFER
MAGNETIC COUNTER DAW1011
Q2~Q4 : BUZZER
Q1 : COUNTER DRIVE
LITHIUM BATTERY
RESET IC (WD)
RESET IC
RAM 32k
IC2 HM62256LP1-12
ROM 32k
PD5178A
IC3
RSSB (1/2) (DWX1243)
Q15, Q16 : LED DRIVER
IC9 :COMMUNICATION LINE SWITCHER
SYSTEM CONTROL
IC15, IC16, IC26 : ADDRESS DECODER
IC24 : INVERTER
IC1 MS0747SP
IC14 : READ/WRITE GATE
CRJB (DWX1168)
IC12 : INVERTER
Q44~Q48 : BUFFER
IC13 : INVERTER
F24,26,27 : VTH1006
IC21
IC21, IC22 : BAUD RATE CL
Q89, Q90 : BUFFER
IC7 :REMOTE CONTROLLER
Q7, Q8, Q47 : LED DRIVER
Q8, Q10 : BUFFER
TO 5.1.10 BRAN (CN8) (➡D - 1)
TO 5.1.10 BRAN (CN2) (➡D - 3)

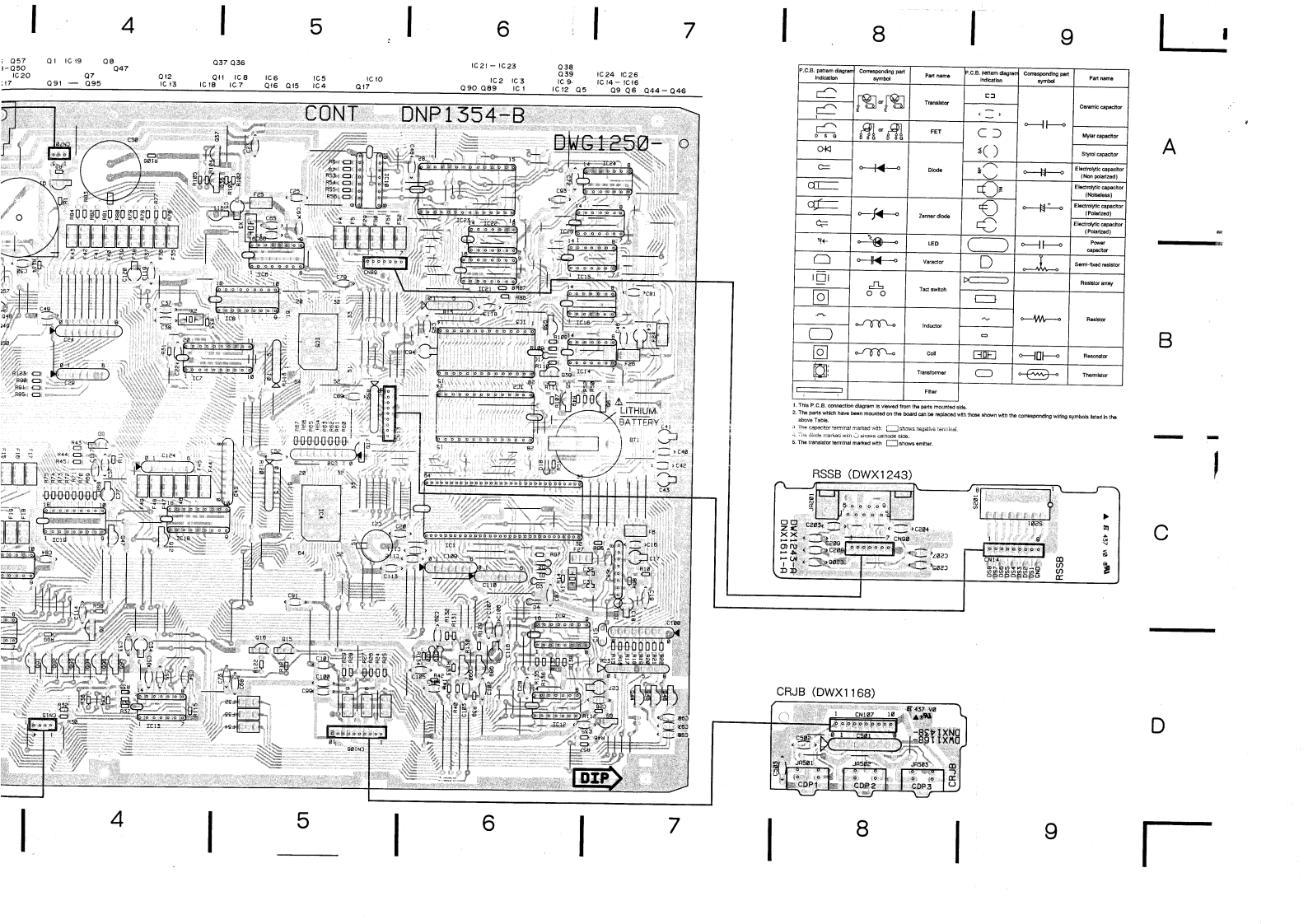
Note : (➡□-□) shows the location number.



5.1.3 POWB, PSWB, ACIN, MTRP, MTRS, STRS, STRP, LAMP AND LACN

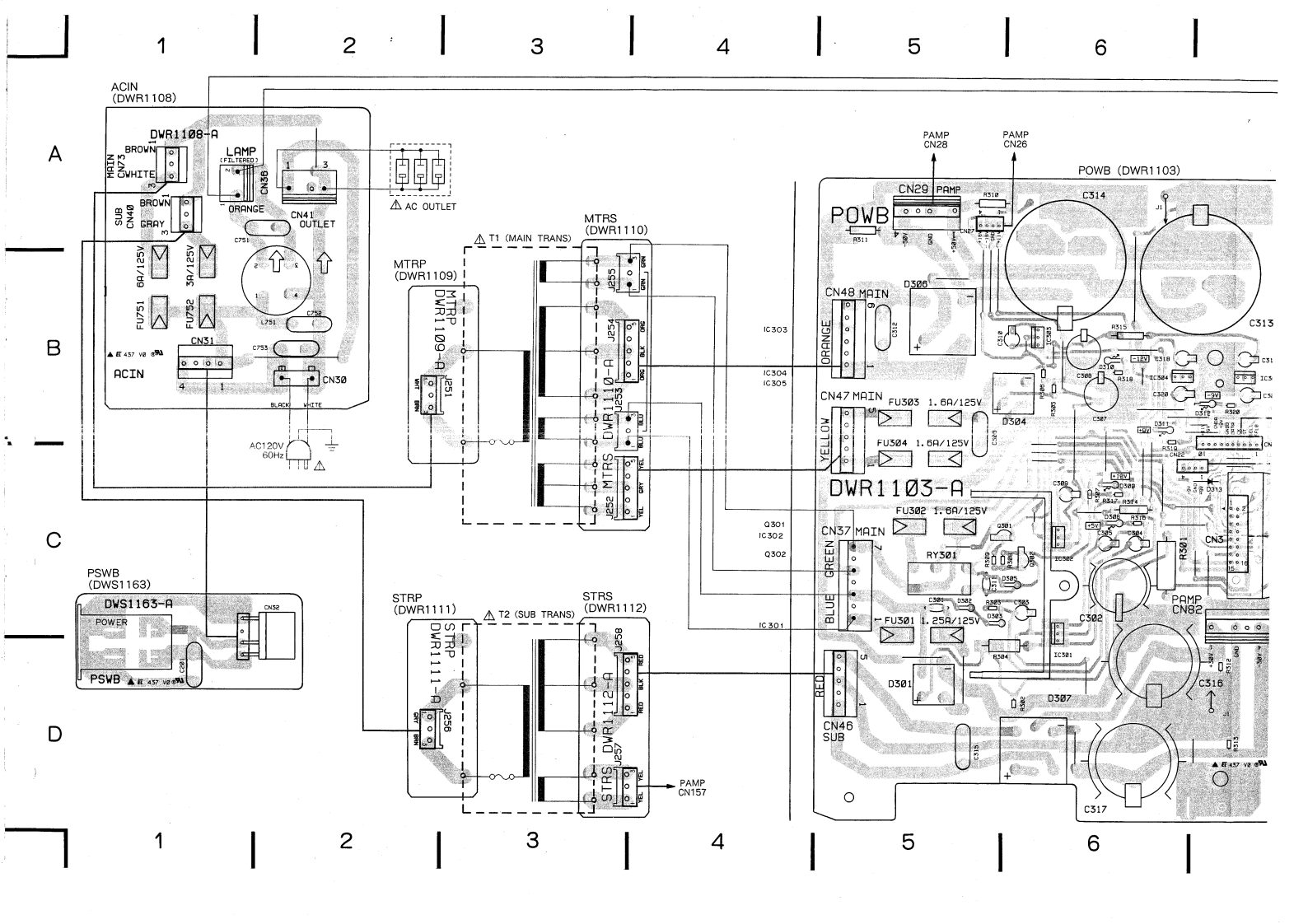


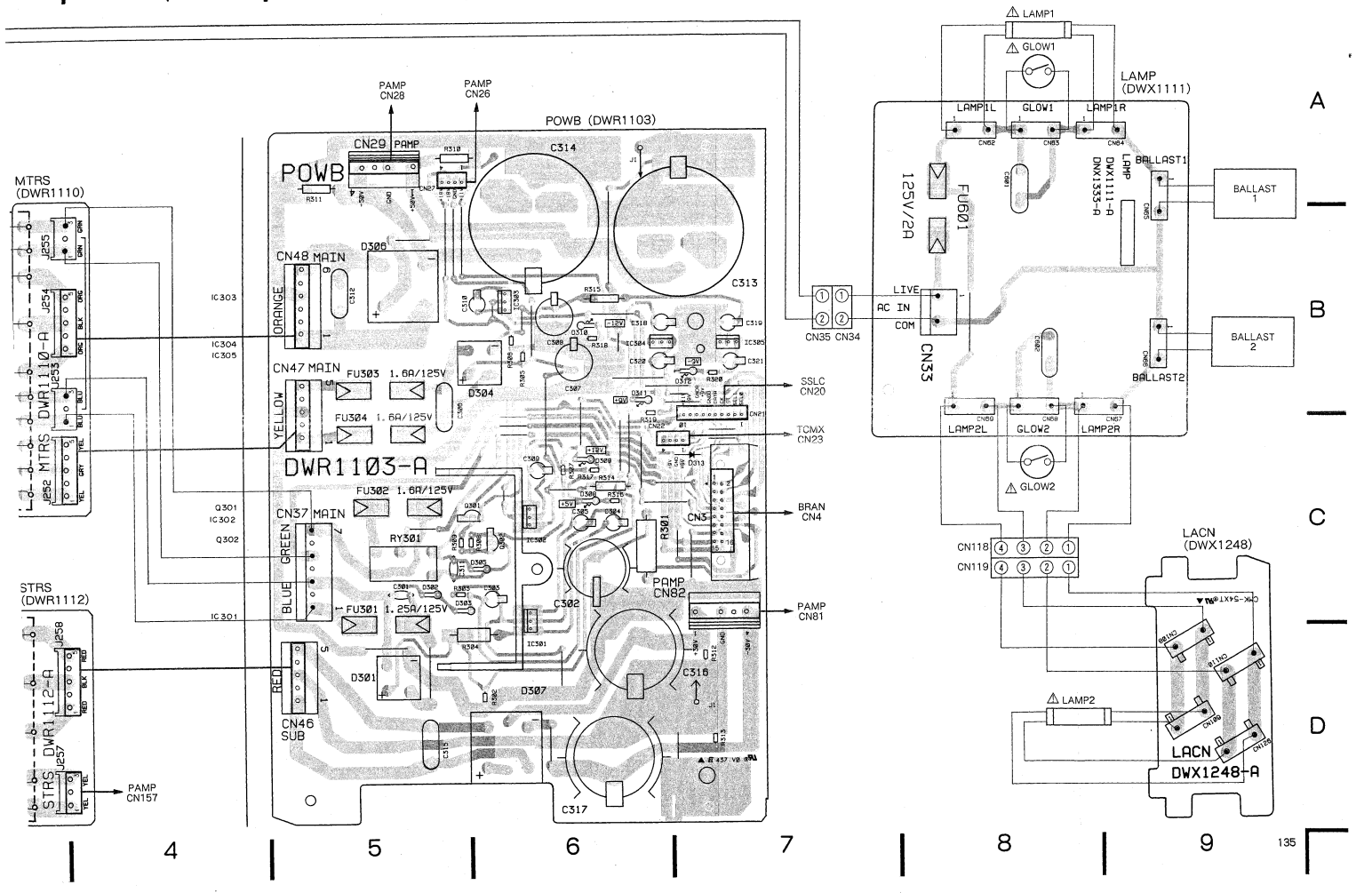

Note : (➡□-□) shows the location number.
LAMP1
FLUORESCENT LAMP DEL-110
GLOW1
GLOW LAMP DEL1001
CN63
CN64
CN65
BALLAST 1 DTH1114
C601 0.01/AC400V RCG-009
CN66
C602 0.01/AC400V RCG-009
BALLAST 2 DTH1114
CN68
CN67
GLOW2
CN118 CN119
LACN (DWX1248)
CN110 CN125
CN108 CN109
FLUORESCENT LAMP DEL-110
LAMP2
FLUORESCENT LAMP SOCKET (UPPER) DKK1006
IC301-IC305 : REGULATOR
RA-H161SD
ST
CK
DATA
GNDD
+12V
-12V
+5V
GNDD
FP
SEL0
SEL1
+14V
GNDM
AC27V
AC27V
INH
CN3
TO 5.1.10 BRAN (CN4) (➡E-4)
CN21
SEL0
SEL1
ST
CK
DATA
GNDD
+9V
GND
-9V
+11V
TO 5.1.4 SSLC (CN20) (➡C-1)
CN22
+9V
GND
-9V
TO 5.1.5 TCMX (CN23) (➡C-1)
Q301, Q302 : RELAY DRIVER
CN29
CN27
GND
-30V
+50V
GND
-50V
+11V
GND
-18V
+18V
TO 5.1.6 P (CN81) (➡C-1)
TO 5.1.6 PAMP (CN28) (➡B-1)
TO 5.1.6 PAMP (CN26) (➡B-4)
IC301 : NJM7805FA
IC302 : NJM7812FA
IC303 : NJM79M12FA
IC304 : NJM78M09FA
IC305 : NJM79M09FA
Q301 : DTC124ES
Q302 : 2SA1283
D301, 304 : S2VB10F
D306, 307 : S10VB10D-F9
D302, 303, 305 : ISR139-400
D308 - 312 : SEL2215S
D313 : 10DF1
RY301 : DSR1006
C302 : RCH1032
C306, 312, 315 : RCG-009
C313, 314 : DCH1034
C316, 317 : DCH-104
R307 : DCN1002
FU301 : DEK1013
FU302 - 304 : DEK1015



P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
		Diode			Styrol capacitor
					Electrolytic capacitor (Non polarized)
					Electrolytic capacitor (Noiseless)
		Zenner diode			Electrolytic capacitor (Polarized)
					Electrolytic capacitor (Polarized)
		LED			Power capacitor
		Varactor			Semi-fixed resistor
		Tact switch			Resistor array
		Inductor			Resistor
		Coil			Resonator
		Transformer			Thermistor
		Filter			

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ◯ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.


ACIN
(DWR1108)
DWR1108-A
MAIN CN73
BROWN
WHITE
LAMP
(FILTERED)
ORANGE
CN36
CN41
OUTLET
AC OUTLET
SUB CN40
BROWN
GRAY
6A/125V
3A/125V
FU751
FU752
C751
C752
L751
C753
CN31
ACIN
CN30
BLACK
WHITE
AC120V
60Hz
T1 (MAIN TRANS)
MTRS
(DWR1110)
MTRP
(DWR1109)
MTRP
DWR1109-A
J251
J255
J254
J253
J252
DWR1110-A
MTRS
GRN
ORG
BLK
BLU
YEL
GRY
IC303
IC304
IC305
Q301
IC302
Q302
IC301
PSWB
(DWS1163)
DWS1163-A
POWER
CN32
PSWB
STRP
(DWR1111)
T2 (SUB TRANS)
STRS
(DWR1112)
STRP
DWR1111-A
J256
J258
J257
DWR1112-A
STRS
RED
PAMP
CN157
PAMP
CN28
PAMP
CN26
POWB (DWR1103)
POWB
CN29 PAMP
C314
C313
CN48 MAIN
ORANGE
D306
CN47 MAIN
YELLOW
FU303 1.6A/125V
FU304 1.6A/125V
D304
DWR1103-A
FU302 1.6A/125V
CN37 MAIN
GREEN
BLUE
RY301
FU301 1.25A/125V
D301
D307
CN46
SUB
RED
C302
C316
C317
PAMP
CN82
CN3
R301
C315
+12V
-12V
+5V
-5V
GND


4
5
6
7
8
9
A
B
C
D
PAMP CN28
PAMP CN26
POWB (DWR1103)
CN29 PAMP
POWB
C314
C313
MTRS (DWR1110)
DWR1110-A
J255
J254
J253
J252 MTRS
CN48 MAIN
ORANGE
D306
IC303
IC304
IC305
CN47 MAIN
YELLOW
FU303 1.6A/125V
FU304 1.6A/125V
D304
DWR1103-A
FU302 1.6A/125V
CN37 MAIN
GREEN
BLUE
RY301
FU301 1.25A/125V
Q301
IC302
Q302
IC301
STRS (DWR1112)
DWR1112-A
J258
J257
STRS
PAMP CN157
RED
D301
D307
CN46 SUB
C317
C316
PAMP CN82
C302
R501
CN3
SSLC CN20
TCMX CN23
BRAN CN4
PAMP CN81
LAMP1
GLOW1
LAMP (DWX1111)
LAMP1L
GLOW1
LAMP1R
CN82
CN85
CN84
BALLAST1
DWX1111-A
DWX1333-A
LAMP
CN80
BALLAST 1
FU601
125V/2A
LIVE
AC IN
COM
CN33
CN35 CN34
CN86
BALLAST2
BALLAST 2
LAMP2L
GLOW2
LAMP2R
CN89
CN88
CN87
GLOW2
CN118
CN119
LACN (DWX1248)
LAMP2
LACN
DWX1248-A
CN128
135

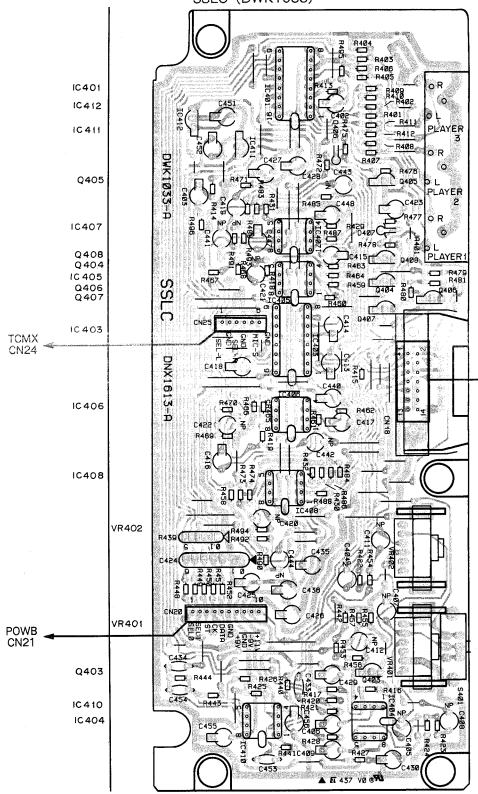
This P.C.B. connection diagram is viewed

This P. C. B. connection diagram is viewed from the foil side.

5.1.4 SSLC

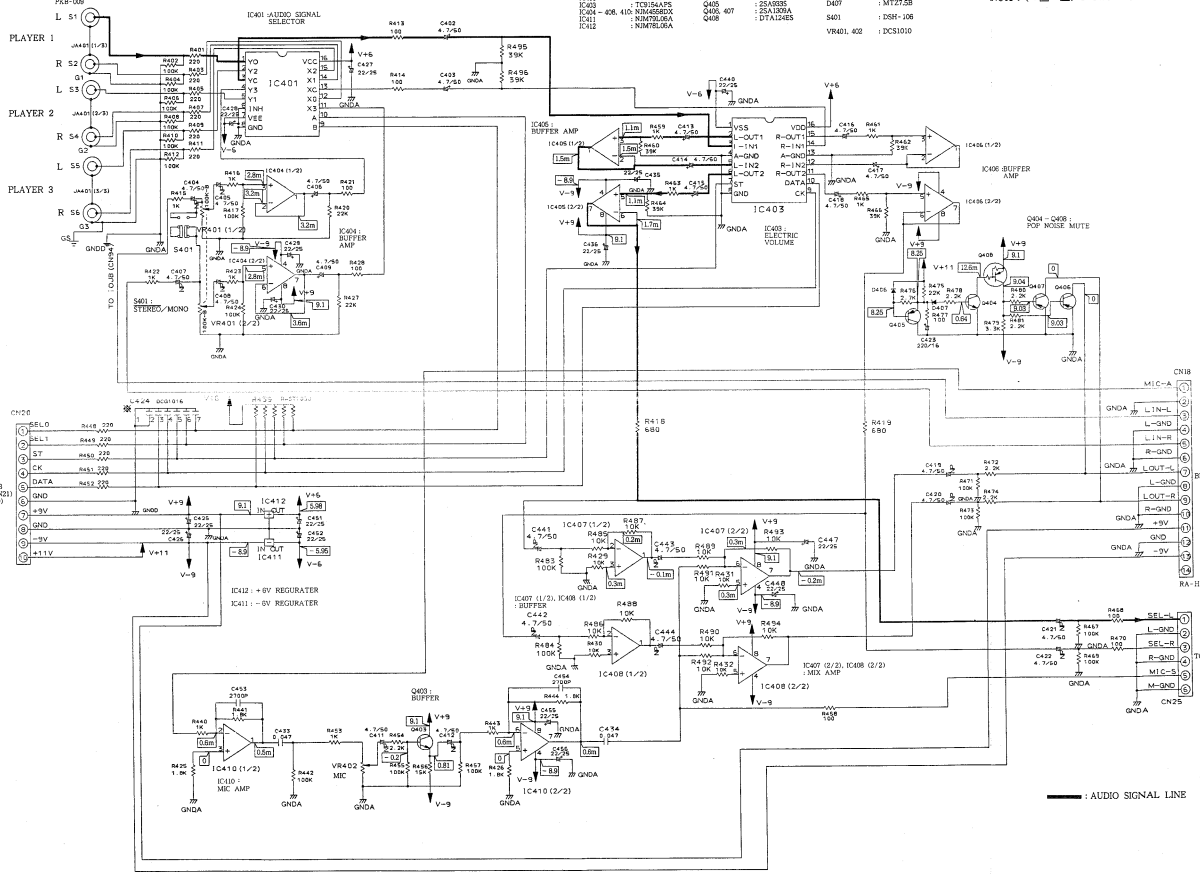
This P. C. B. connection diagram is viewed from the foil side.

SSLC (DWK1033)



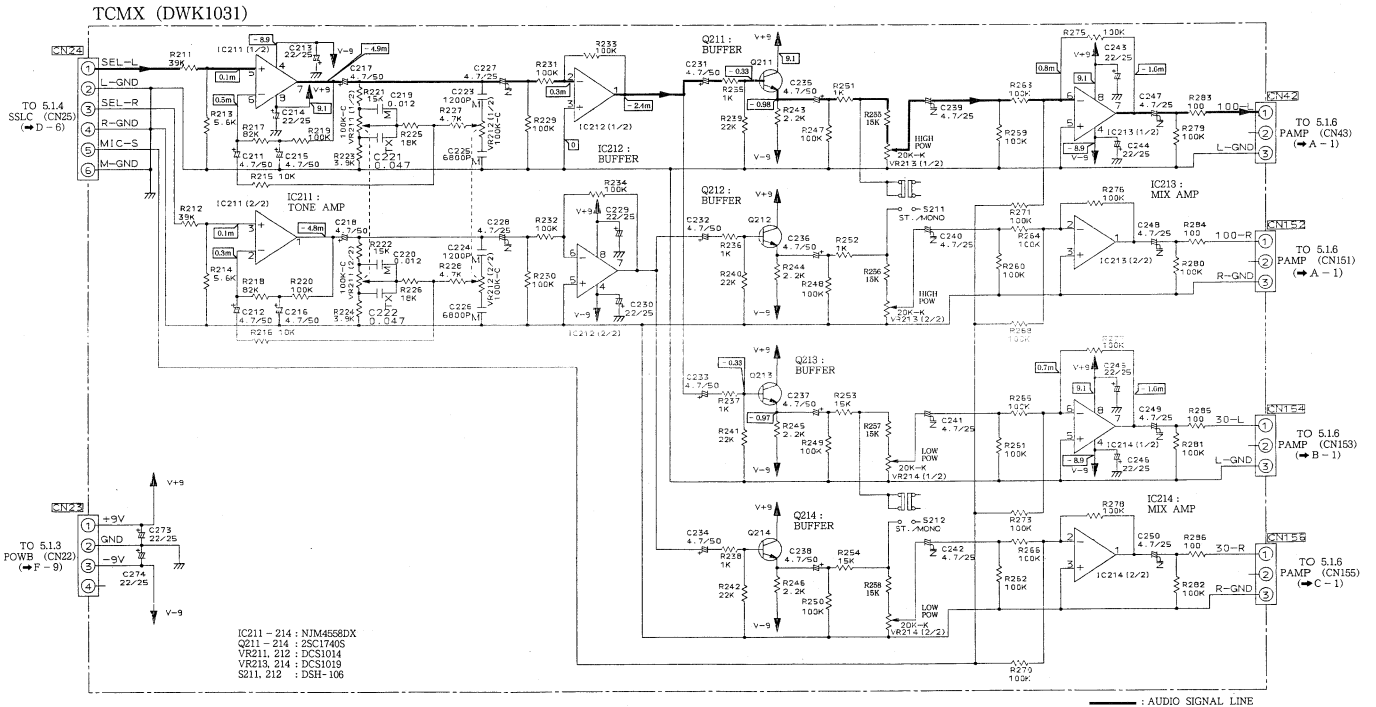
SSLC (DWK1033)

Note : (➡□-□) shows the location number.

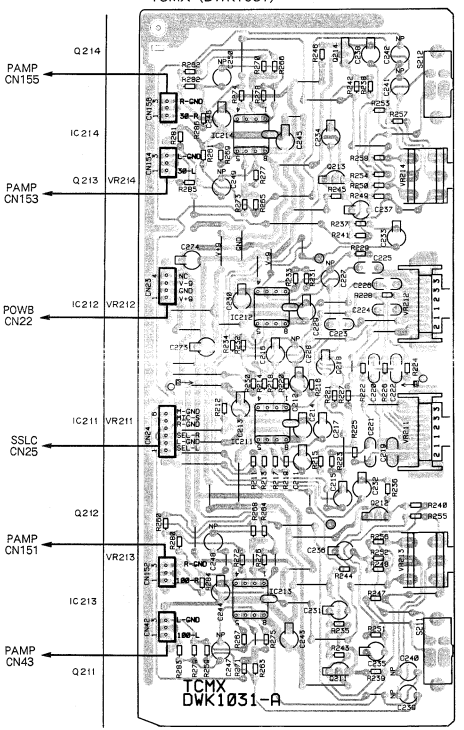


5.1.5 TCMX

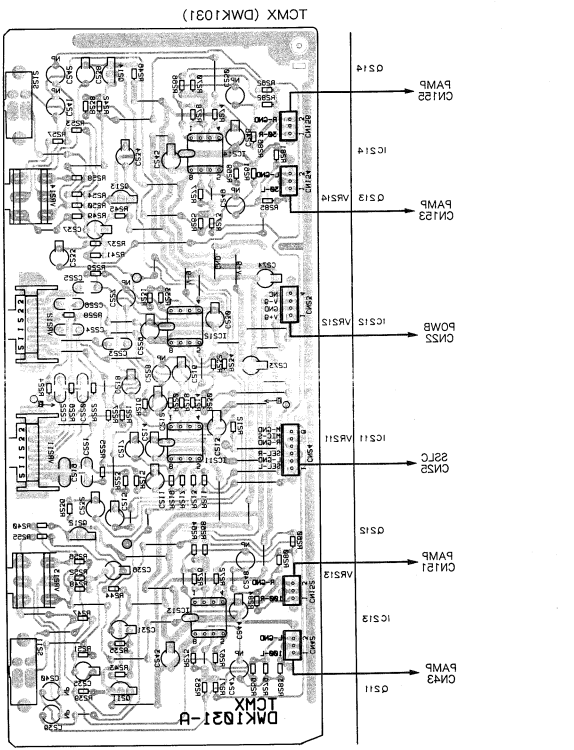
Note : (➡□-□) shows the location number.



TCMX (DWK1031)

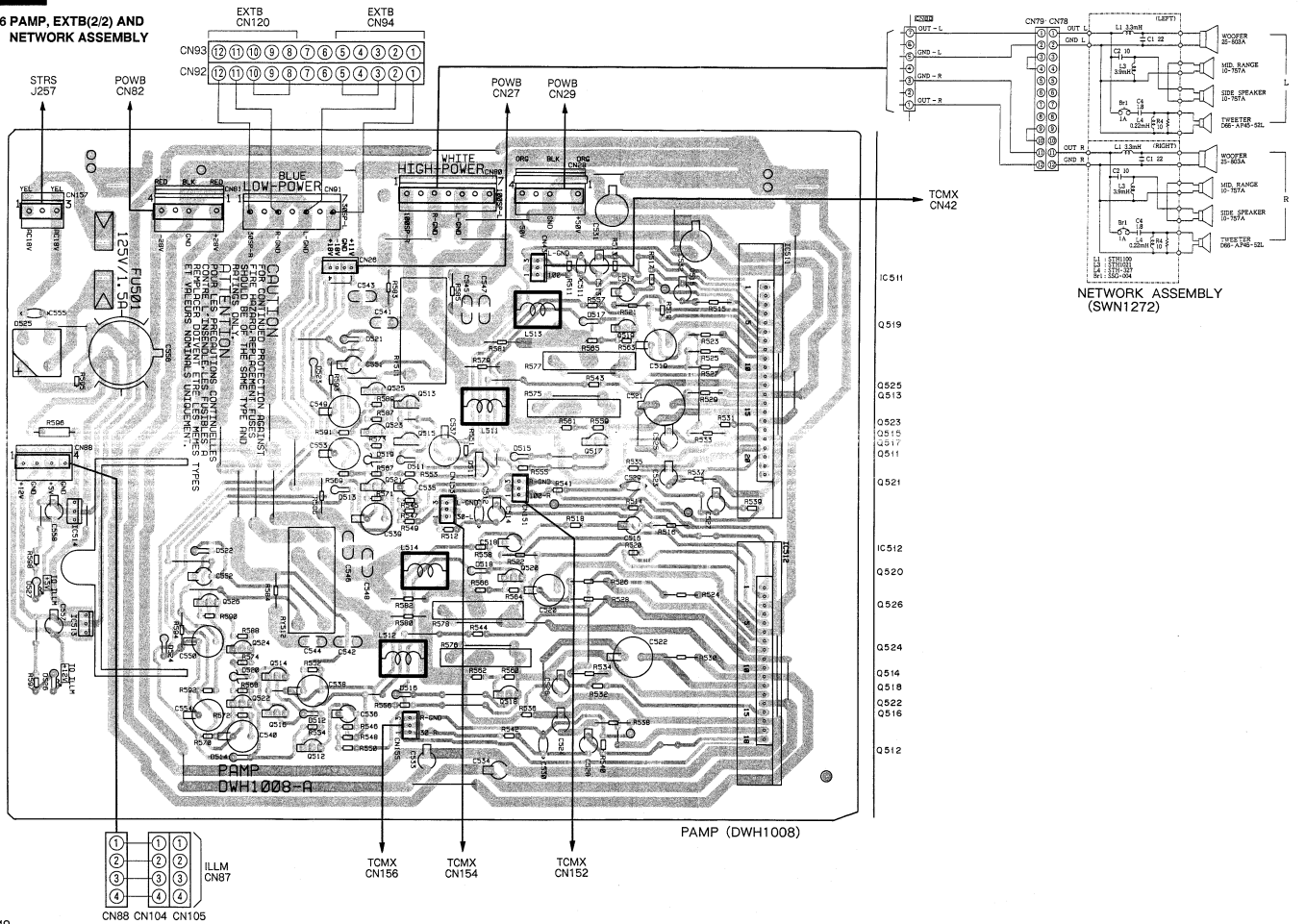


This P. C. B. connection diagram is viewed from the foil side.

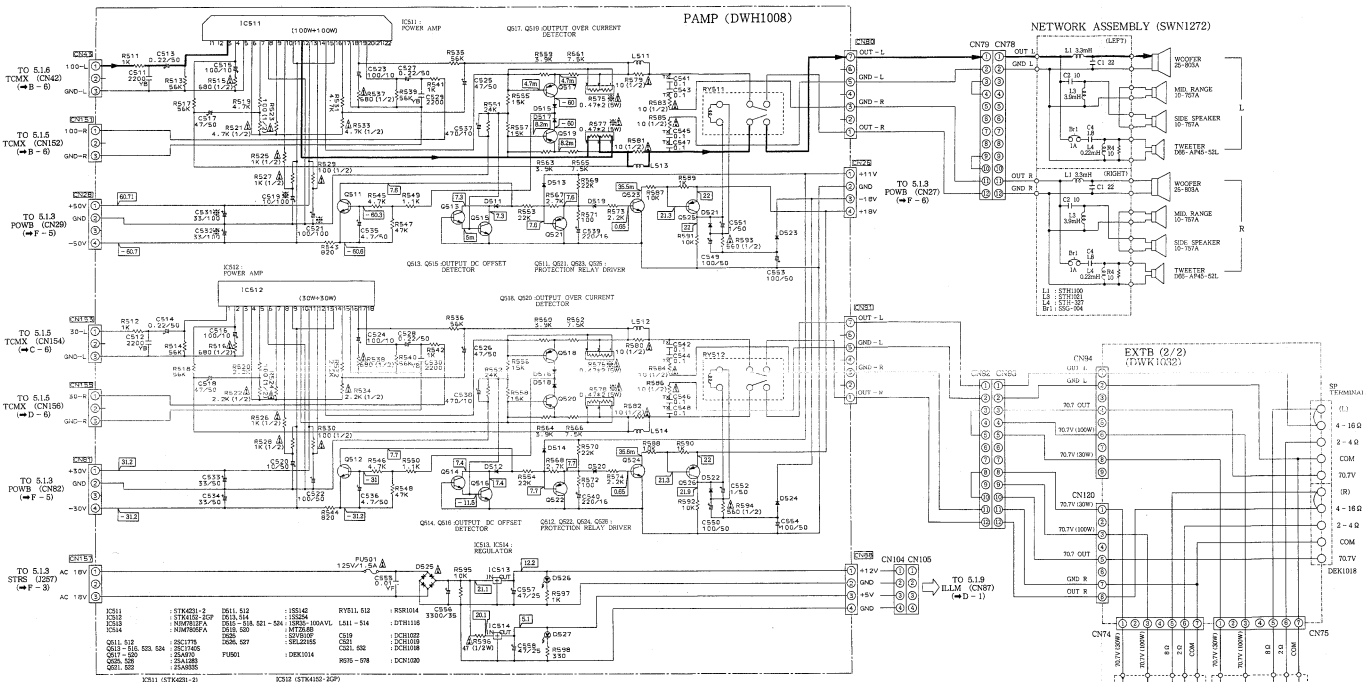


3.1.9 PAMP, EXTB(2/2) AND NETWORK ASSEMBLY

5.1.6 PAMP, EXTB(2/2) AND NETWORK ASSEMBLY



Note : (➡□-□) shows the location number.


PAMP (DWH1008)
NETWORK ASSEMBLY (SWN1272)
EXTB (2/2) (DWK1002)
IC511 (100W+100W)
IC512 (50W+50W)
TO 5.1.6 TCMX (CN42) (➡B - 6)
TO 5.1.5 TCMX (CN152) (➡B - 6)
TO 5.1.3 POWB (CN29) (➡F - 5)
TO 5.1.5 TCMX (CN154) (➡C - 6)
TO 5.1.5 TCMX (CN156) (➡D - 6)
TO 5.1.3 POWB (CN82) (➡F - 5)
TO 5.1.3 STRS (J267) (➡F - 3)
TO 5.1.3 POWB (CN27) (➡F - 6)
TO 5.1.9 ILLM (CN87) (➡D - 1)
WOOFER 25-8SA
MID RANGE 10-7SA
SIDE SPEAKER 10-7SA
TWEETER 06S-APAS-52L
SP TERMINAL
4 - 16 Ω
2 - 4 Ω
COM
70.7V
OUTPUT TRANS (R) DTX1003 T3
OUTPUT TRANS (L) DTX1003 T4
: AUDIO SIGNAL LINE

IC511 (STK4231-2)

Pin	Voltage	Pin	Voltage	Pin	Voltage
1	58.4	9	- 69.9	17	- 1.14m
2	1.04	10	- 63.5	18	0.1m
3	- 1.44.1m	11	- 60.7	19	- 141.7m
4	- 142.5m	12	14.6m	20	- 141.7m
5	0.1m	13	60.7m	21	1.04
6	- 56	14	69.2	22	58.4
7	- 1.15	15	1.14m		
8	0.1m	16	- 60.7		

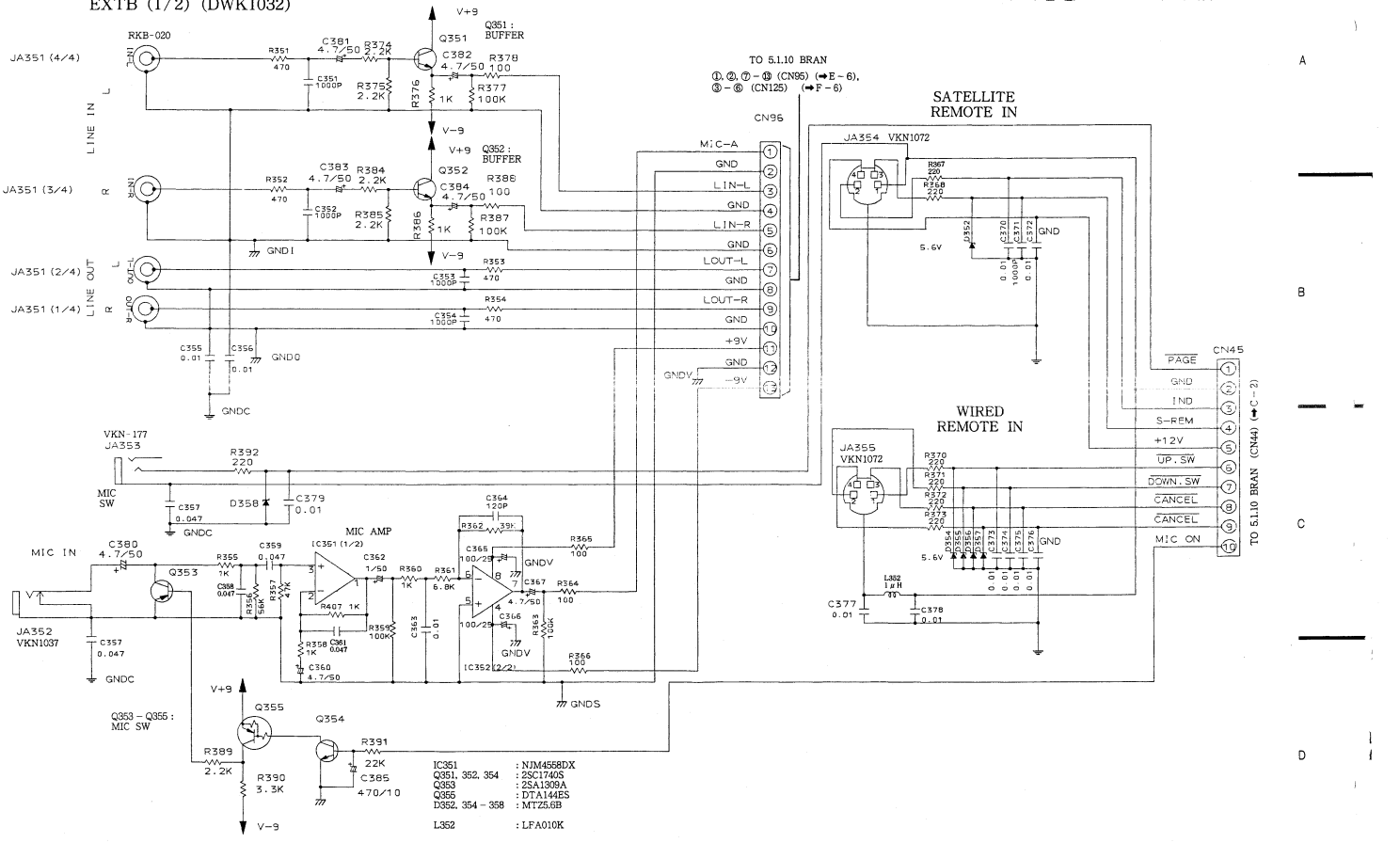
IC512 (STK4152-2GP)

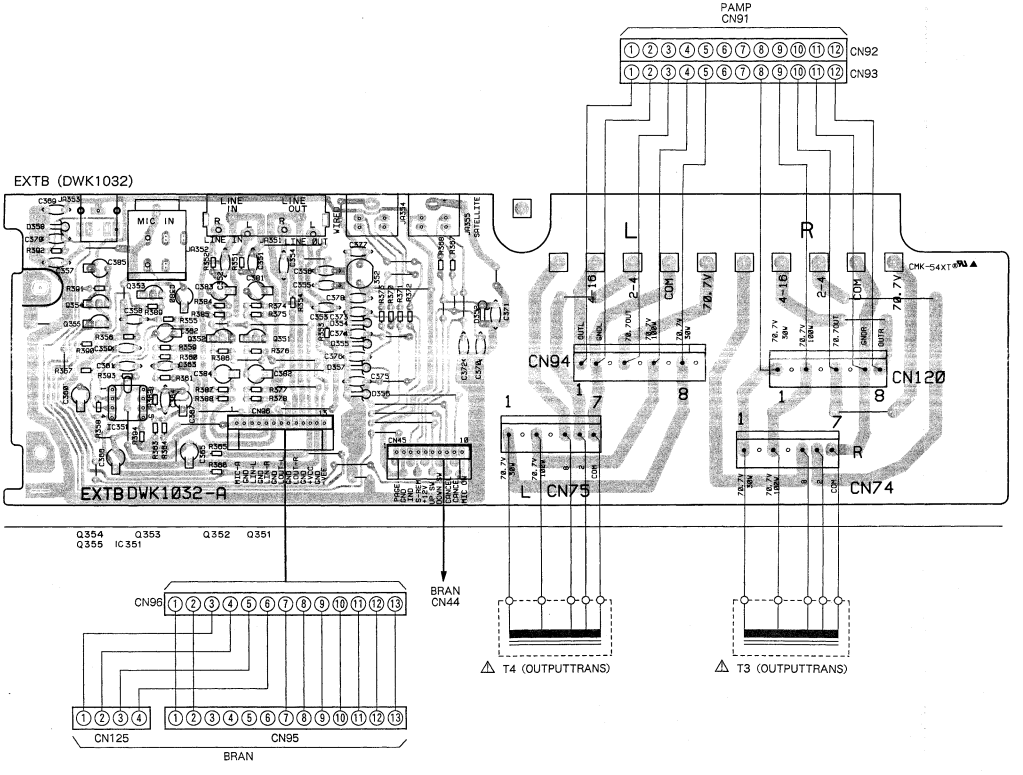
Pin	Voltage	Pin	Voltage	Pin	Voltage
1	- 158.1m	7	- 30.4	13	- 9.5m
2	- 159.1m	8	- 31	14	- 31.2
3	- 0.16m	9	- 31.2	15	- 1.24
4	- 28.5	10	- 6.3m	16	- 0.16
5	- 1.24	11	31.2	17	- 122.4m
6	- 0.16m	12	29.7	18	- 155.3m

5.1.7 EXTB(1/2)

EXTB (1/2) (DWK1032)

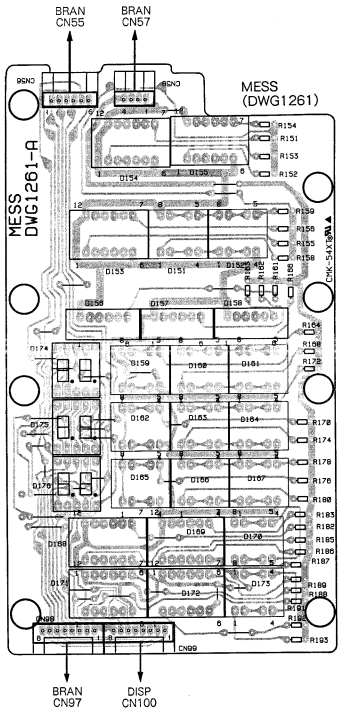
Note : (➡□-□) shows the location number.




PAMP
CN91
CN92
CN93
EXTB (DWK1032)
MIC IN
LINE IN
LINE OUT
L
R
CN94
CN120
CN75
CN74
EXTB DWK1032-A
Q354 Q353 Q352 Q351
Q355 IC351
CN96
BRAN
CN44
CN125
CN95
BRAN
T4 (OUTPUTTRANS)
T3 (OUTPUTTRANS)

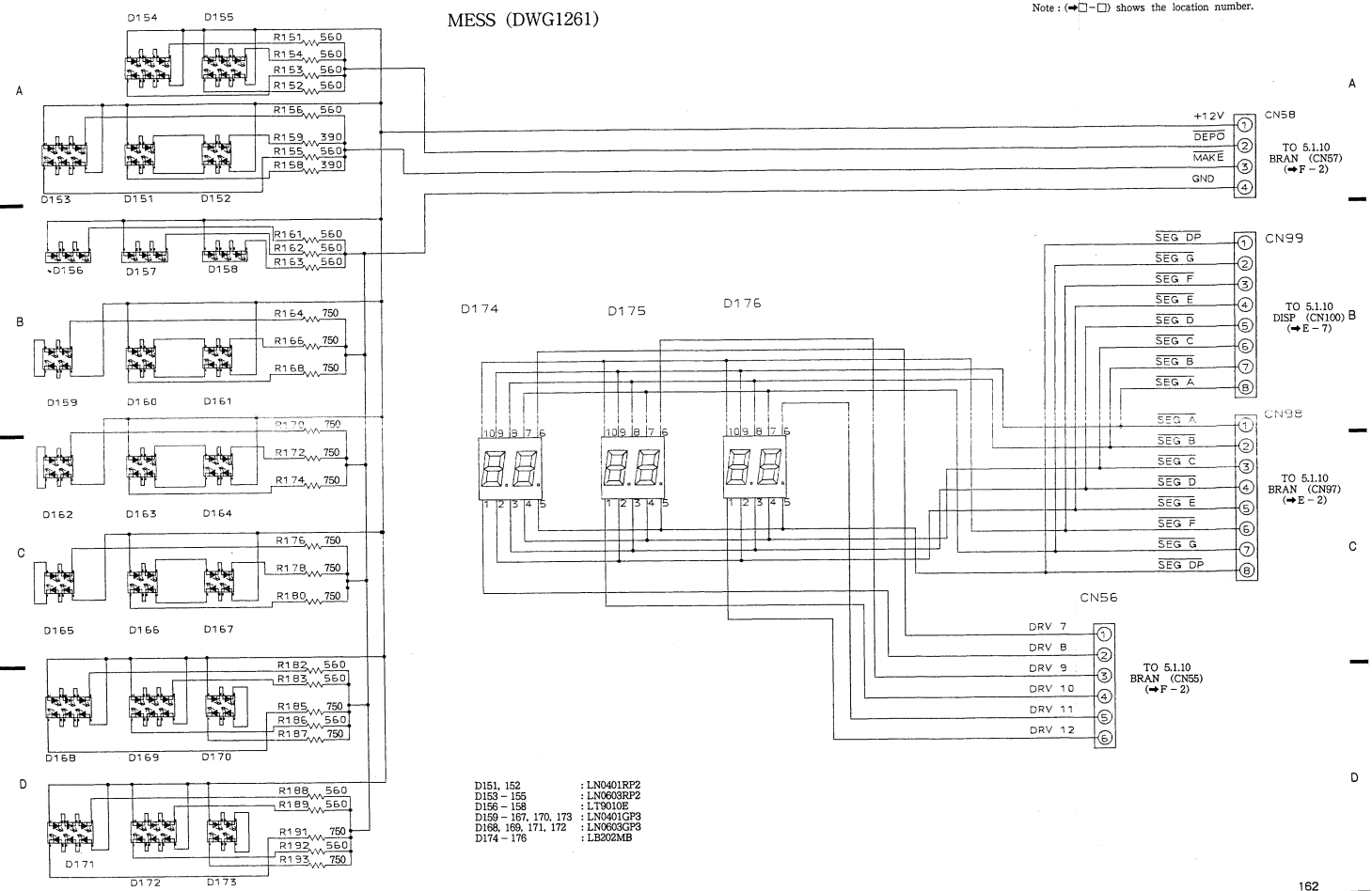
This P.C.B. connection diagram is viewed from the foil side.

This P. C. B. connection diagram is viewed from the foil side.


BRAN
CN55
BRAN
CN57
MESS
(DWG1261)
MESS
DWG1261-A
CN99
BRAN
CN97
DISP
CN100

Note : (➡□-□) shows the location number.

MESS (DWG1261)

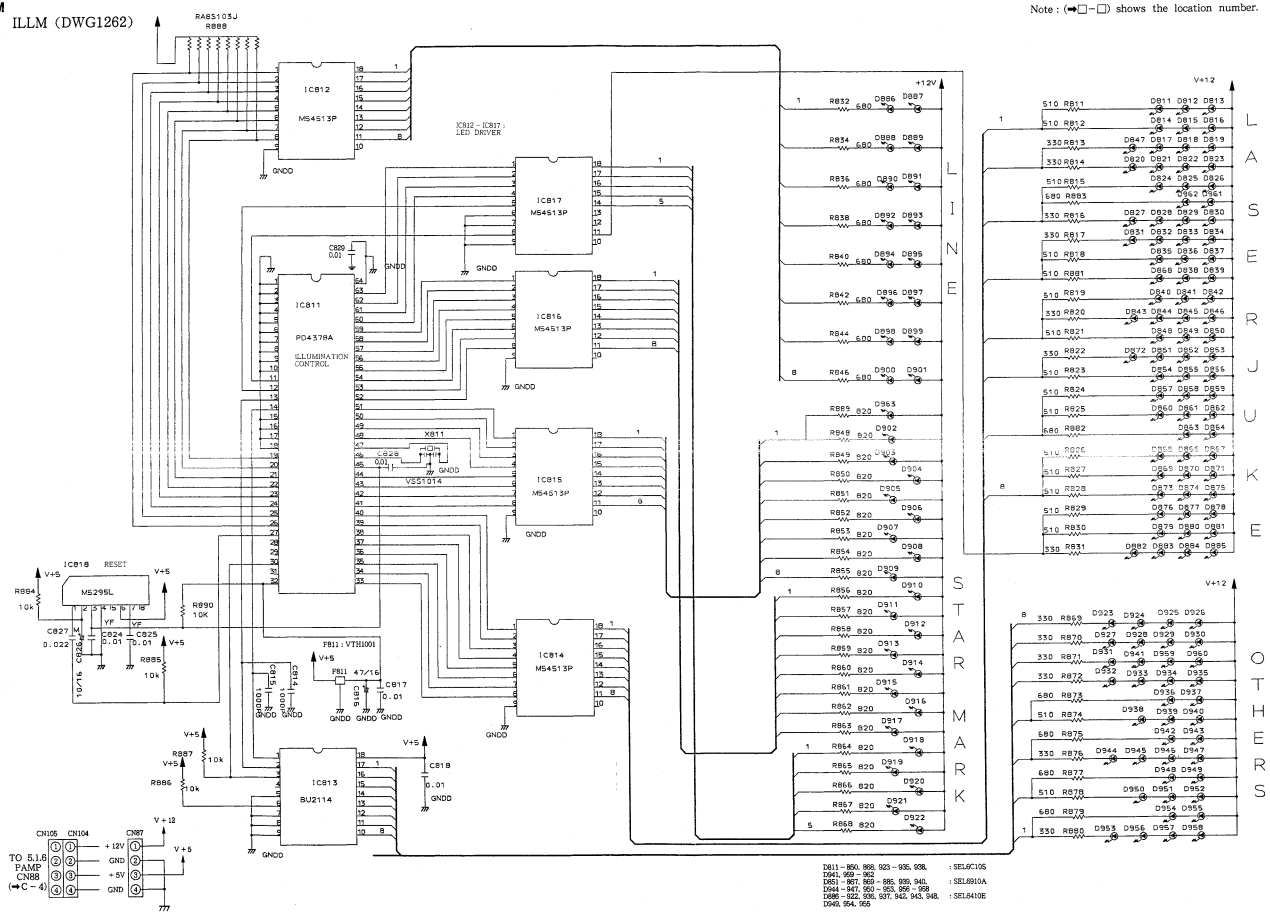


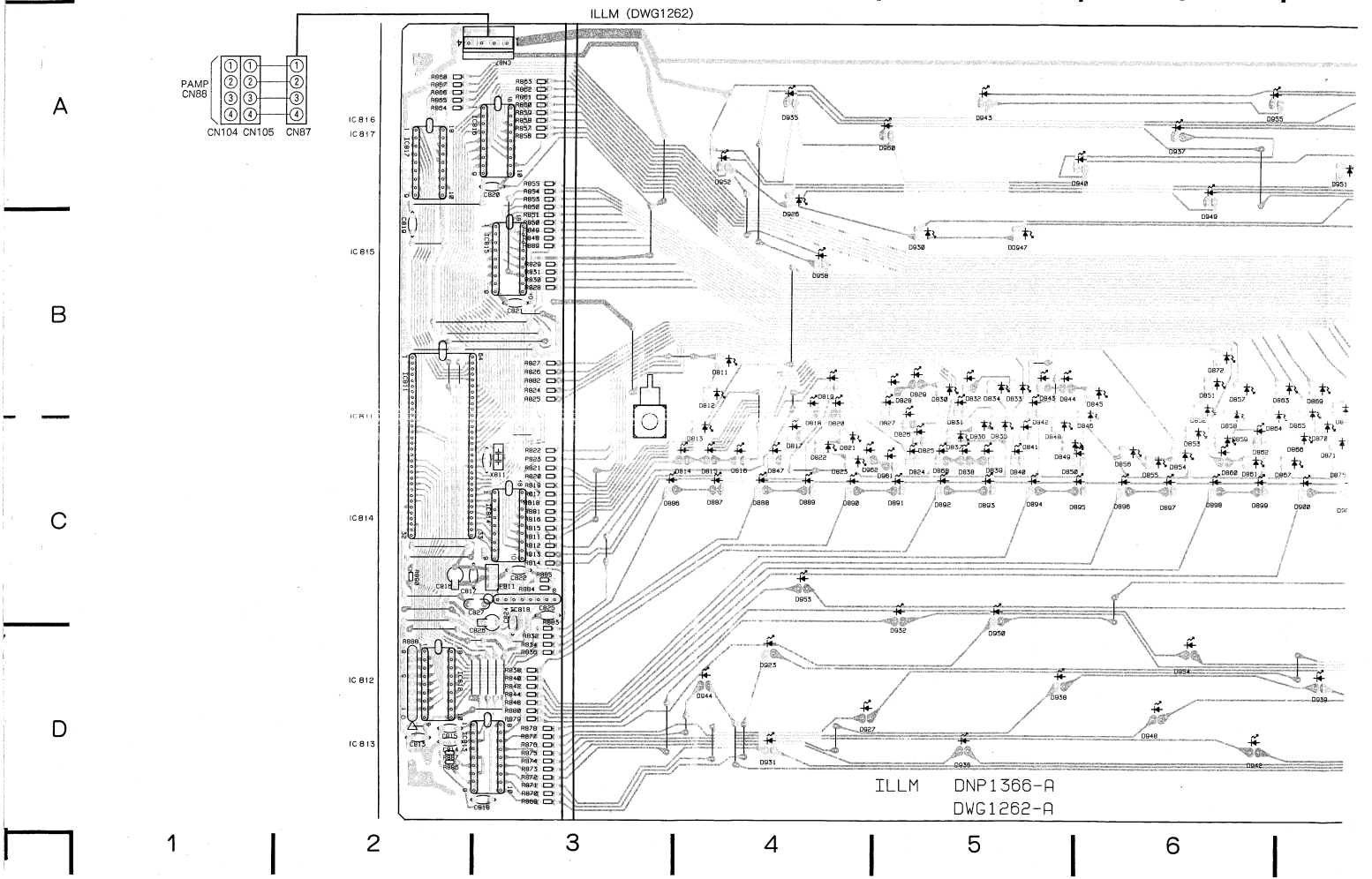
D151, 152	: LN0401RP2
D153 - 155	: LN0603RP2
D156 - 158	: LT9010E
D159 - 167, 170, 173	: LN0401GP3
D168, 169, 171, 172	: LN0603GP3
D174 - 176	: LB202MB

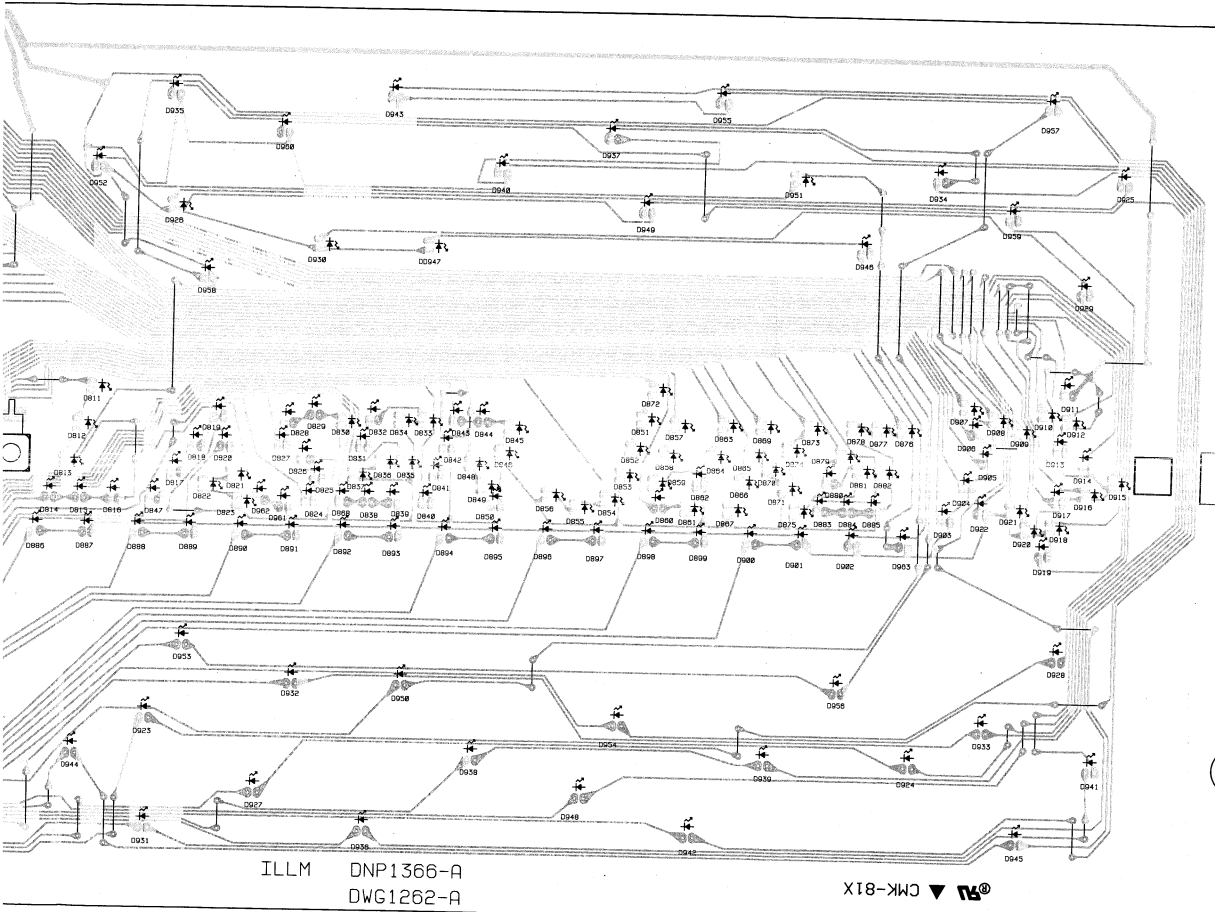
5.1.9 ILLM

ILLM (DWG1262)

Note : (➡□-□) shows the location number.




ILLM (DWG1262)
PAMP
CN88
CN104 CN105 CN87
IC816
IC817
IC815
IC811
IC814
IC812
IC813
ILLM DNP1366-A
DWG1262-A


4
5
6
7
8
9
A
B
C
D
ILLM DNP1366-A
DWG1262-A
CMK-81X

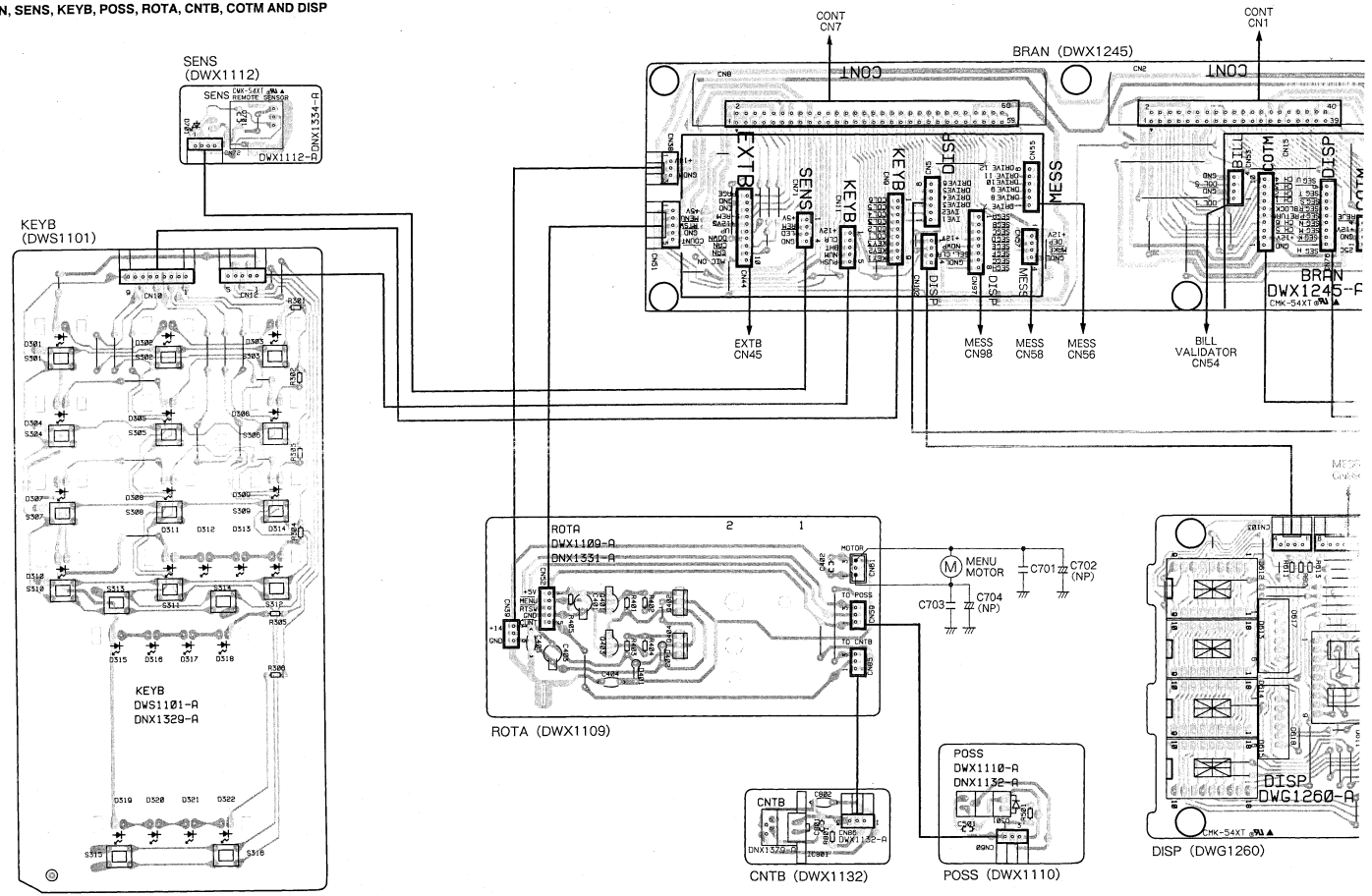
DMC1288-A
DMC1288-A
ILLM
CWK-8IX

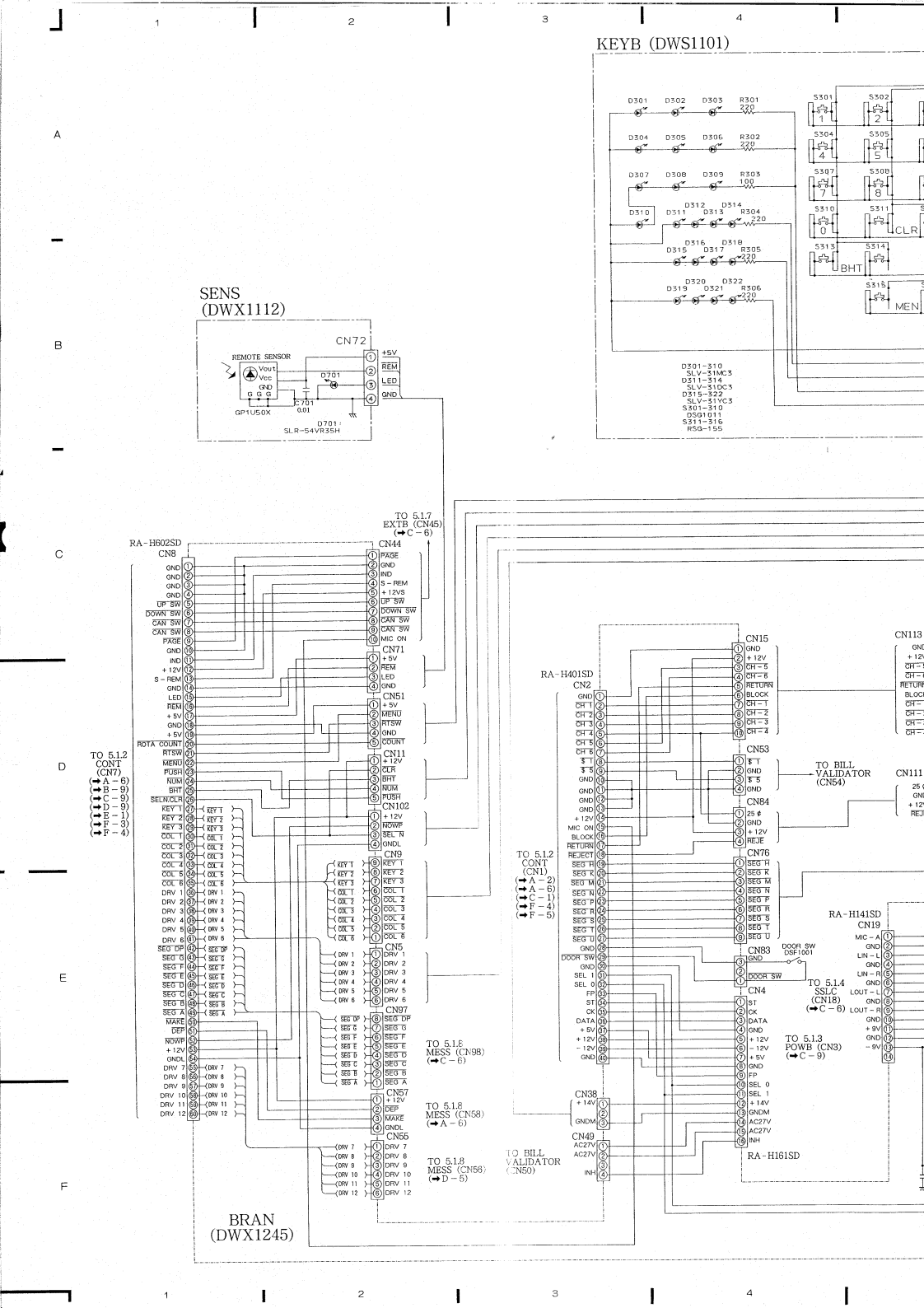
This P.C.B. connection diagram is viewed from the foil side.
CN1A
CN1B
CN1C
CN1D
CN1E
CN1F
CN1G
CN1H
CN1J
CN1K
CN1L
CN1M
CN1N
CN1P
CN1Q
CN1R
CN1S
CN1T
CN1U
CN1V
CN1W
CN1X
CN1Y
CN1Z
CN2A
CN2B
CN2C
CN2D
CN2E
CN2F
CN2G
CN2H
CN2J
CN2K
CN2L
CN2M
CN2N
CN2P
CN2Q
CN2R
CN2S
CN2T
CN2U
CN2V
CN2W
CN2X
CN2Y
CN2Z
CN3A
CN3B
CN3C
CN3D
CN3E
CN3F
CN3G
CN3H
CN3J
CN3K
CN3L
CN3M
CN3N
CN3P
CN3Q
CN3R
CN3S
CN3T
CN3U
CN3V
CN3W
CN3X
CN3Y
CN3Z

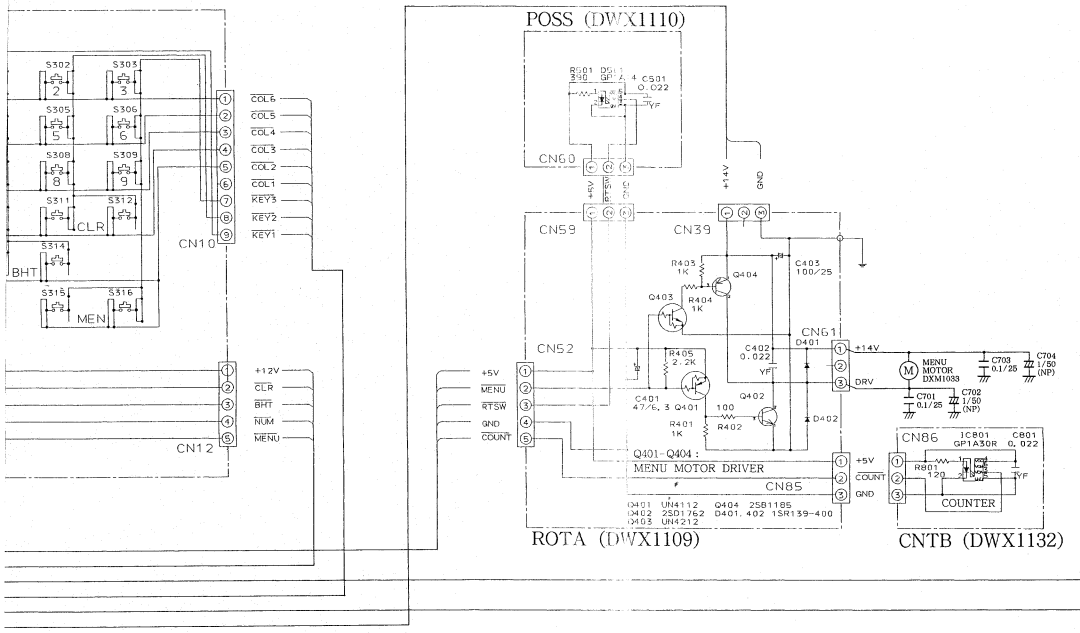
This P. C. B. connection
DISP (DMG1260)
MOTOR
ROTATION
ACCELERATOR
COIN
DOOR
SW
MESS
EXTB
SOUND
BILL
VALIDATOR
KEY
DISP
COIN
METER
SOUND
BRAKE
ACCELERATOR
COIN
ROTATION
(HALL)
MOTOR
(DMX1240)
BRAKE
(DMX1240)
POSS (DMX1110)
CNTB (DMX1132)
(X1109)

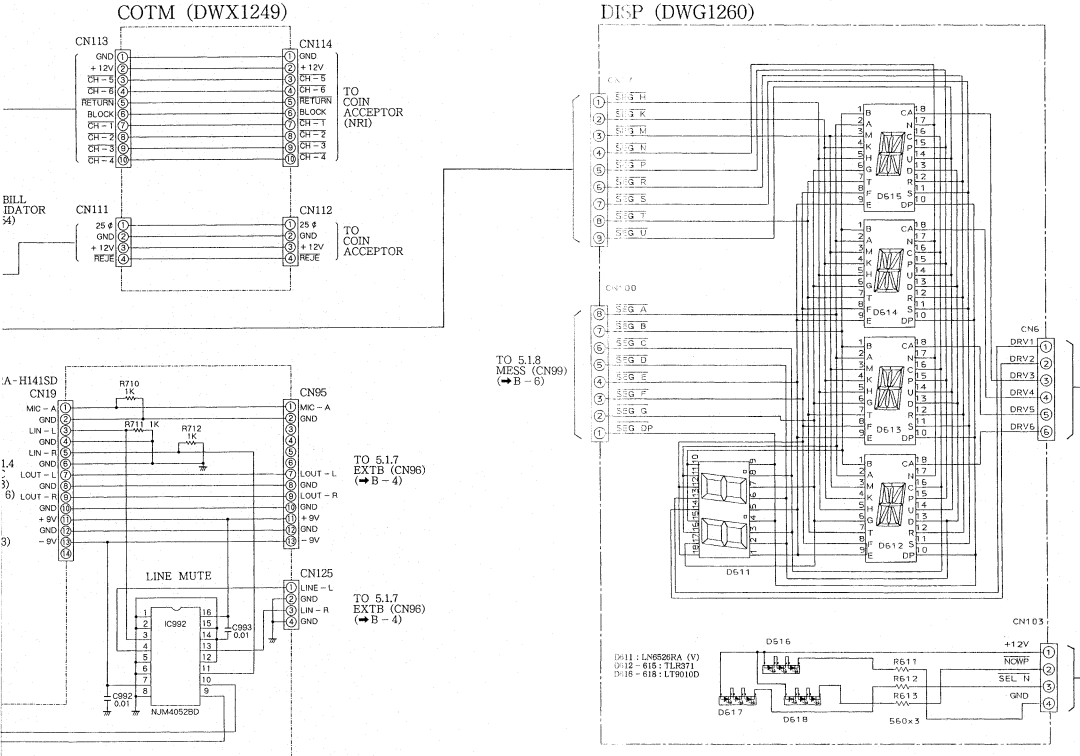
8.1.10 BRAN, SENS, KEYB, POSS, ROTA, CNTB, COTM AND DISP

5.1.10 BRAN, SENS, KEYB, POSS, ROTA, CNTB, COTM AND DISP

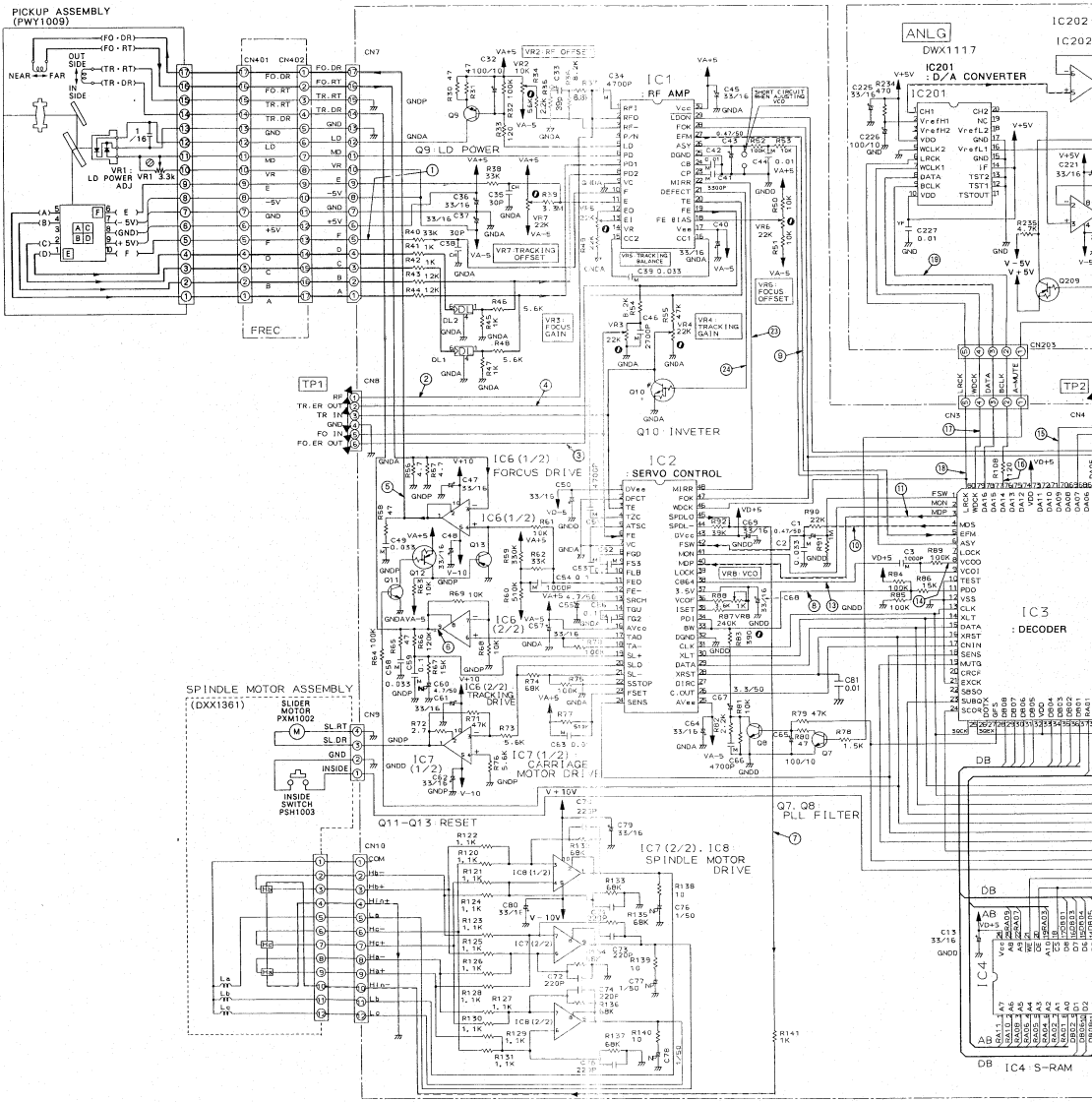



KEYB (DWS1101)
D301 D302 D303 R301 220
D304 D305 D306 R302 220
D307 D308 D309 R303 100
D312 D314
D310 D311 D313 R304 220
D316 D318
D315 D317 R305 220
D320 D322
D319 D321 R306 220
S301 S302
S304 S305
S307 S308
S310 S311
S313 S314
S315
CLR
BHT
MEN
D301-310 SLV-31MC3
D311-316 SLV-31DC3
D315-322 SLV-31YC3
S301-310 DSQ1011
S311-316 RSQ-155
SENS (DWX1112)
CN72
REMOTE SENSOR
Vout
Vcc
GND
GP1U50X
D701
C701 0.01
D701 : SLR-54VR35H
+5V
REM
LED
GND
RA-H602SD
CN8
GND
GND
GND
GND
UP SW
DOWN SW
CAN SW
CAN SW
PAGE
GND
IND
+ 12V
S - REM
GND
LED
REM
+ 5V
GND
+ 5V
ROTA COUNT
RTSW
MENU
PUSH
NUM
BHT
SELN.CLR
KEY 1
KEY 2
KEY 3
COL 1
COL 2
COL 3
COL 4
COL 5
COL 6
DRV 1
DRV 2
DRV 3
DRV 4
DRV 5
DRV 6
SEG DP
SEG G
SEG F
SEG E
SEG D
SEG C
SEG B
SEG A
MAKE
DEP
NOWP
+ 12V
GNDL
DRV 7
DRV 8
DRV 9
DRV 10
DRV 11
DRV 12
TO 5.1.7 EXTB (CN45) (➡C－6)
CN44
PAGE
GND
IND
S - REM
+ 12VS
UP SW
DOWN SW
CAN SW
CAN SW
MIC ON
CN71
+ 5V
REM
LED
GND
CN51
+ 5V
MENU
RTSW
GND
COUNT
CN11
+ 12V
CLR
BHT
NUM
PUSH
CN102
+ 12V
NOWP
SEL N
GNDL
CN9
KEY 1
KEY 2
KEY 3
COL 1
COL 2
COL 3
COL 4
COL 5
COL 6
CN5
DRV 1
DRV 2
DRV 3
DRV 4
DRV 5
DRV 6
CN97
SEG DP
SEG G
SEG F
SEG E
SEG D
SEG C
SEG B
SEG A
CN57
+ 12V
DEP
MAKE
GNDL
CN55
DRV 7
DRV 8
DRV 9
DRV 10
DRV 11
DRV 12
TO 5.1.2 CONT (CN7) (➡A－6) (➡B－9) (➡C－9) (➡D－9) (➡E－1) (➡F－3) (➡F－4)
TO 5.1.8 MESS (CN98) (➡C－6)
TO 5.1.8 MESS (CN58) (➡A－6)
TO 5.1.8 MESS (CN56) (➡D－5)
BRAN (DWX1245)
RA-H401SD
CN2
GND
CH 1
CH 2
CH 3
CH 4
CH 5
CH 6
$ 1
$ 5
GND
GND
GND
+ 12V
MIC ON
BLOCK
RETURN
REJECT
SEG H
SEG K
SEG M
SEG N
SEG P
SEG R
SEG S
SEG T
SEG U
GND
DOOR SW
SEL 1
SEL 0
FP
ST
CK
DATA
+ 5V
+ 12V
- 12V
GND
CN38
+ 14V
GNDM
CN49
AC27V
AC27V
INH
TO 5.1.2 CONT (CN1) (➡A－2) (➡A－6) (➡C－1) (➡F－4) (➡F－5)
TO BILL VALIDATOR (CN50)
CN15
GND
+ 12V
CH－5
CH－6
RETURN
BLOCK
CH－1
CH－2
CH－3
CH－4
CN53
$ 1
GND
$ 5
GND
TO BILL VALIDATOR (CN54)
CN84
25 ¢
GND
+ 12V
REJE
CN76
SEG H
SEG K
SEG M
SEG N
SEG P
SEG R
SEG S
SEG T
SEG U
CN83
GND
DOOR SW
DOOR SW DSF1001
CN4
ST
CK
DATA
GND
+ 12V
- 12V
+ 5V
GND
FP
SEL 0
SEL 1
+ 14V
GNDM
AC27V
AC27V
INH
TO 5.1.4 SSLC (CN18) (➡C－6)
TO 5.1.3 POWB (CN3) (➡C－9)
RA-H161SD
CN113
GND
+ 12V
CH－5
CH－6
RETURN
BLOCK
CH－1
CH－2
CH－3
CH－4
CN111
25 ¢
GND
+ 12V
REJE
RA-H141SD
CN19
MIC－A
GND
LIN－L
GND
LIN－R
GND
LOUT－L
GND
LOUT－R
GND
+ 8V
GND
- 8V


POSS (DWX1110)
CN60
CN59
CN39
CN52
CN61
CN86
CN85
CN12
CN110
S302
S303
S305
S306
S308
S309
S311
S312
S314
S315
S316
CLR
BHT
MEN
COL6
COL5
COL4
COL3
COL2
COL1
KEY3
KEY2
KEY1
+12V
CLR
BHT
NUM
MENU
+5V
RTSW
GND
COUNT
Q401 - Q404 :
MENU MOTOR DRIVER
MENU MOTOR DXM1033
COUNTER
ROTA (DWX1109)
CNTB (DWX1132)


COTM (DWX1249)
CN113
CN114
CN111
CN112
TO COIN ACCEPTOR (NRI)
TO COIN ACCEPTOR
DISP (DWG1260)
CN95
CN125
IC992
NJM4052BD
LINE MUTE
TO 5.1.7 EXTB (CN96) (➡B – 4)
TO 5.1.8 MESS (CN99) (➡B – 6)
CN103
D611 : LN6526RA (V)
D612 – 615 : TLR371
D616 – 618 : LT9010D

5.2 CD SECTION

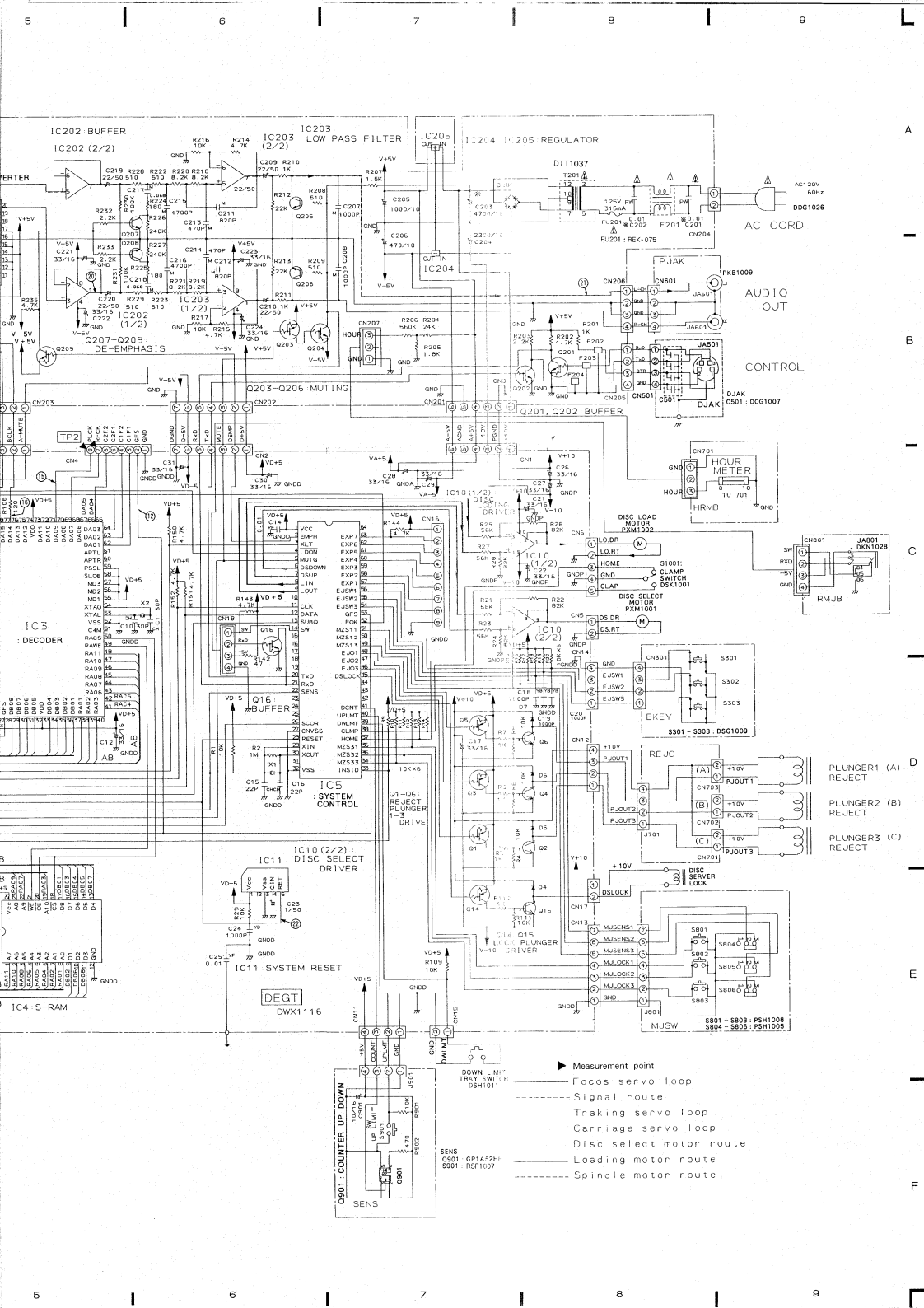


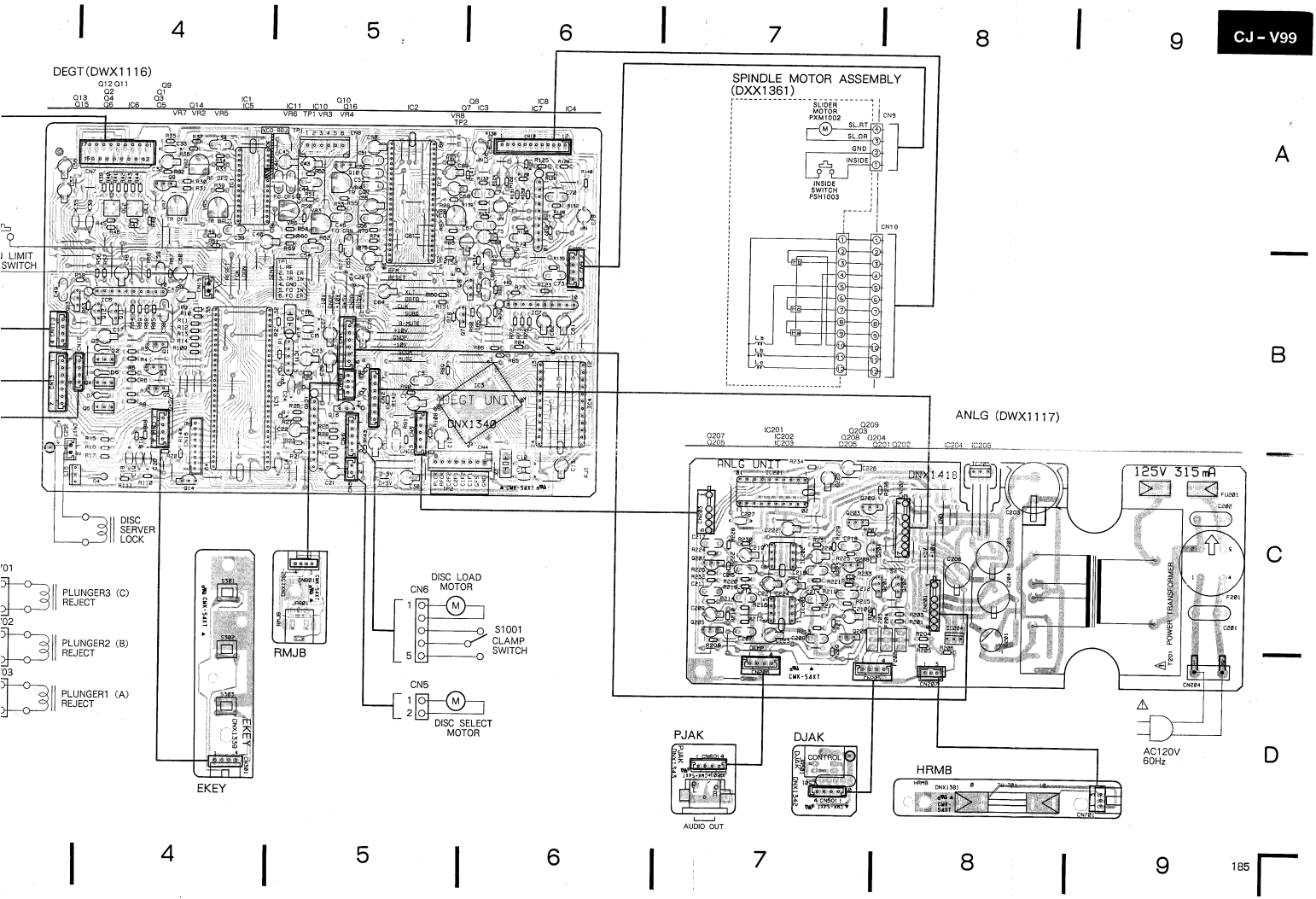
DEGT

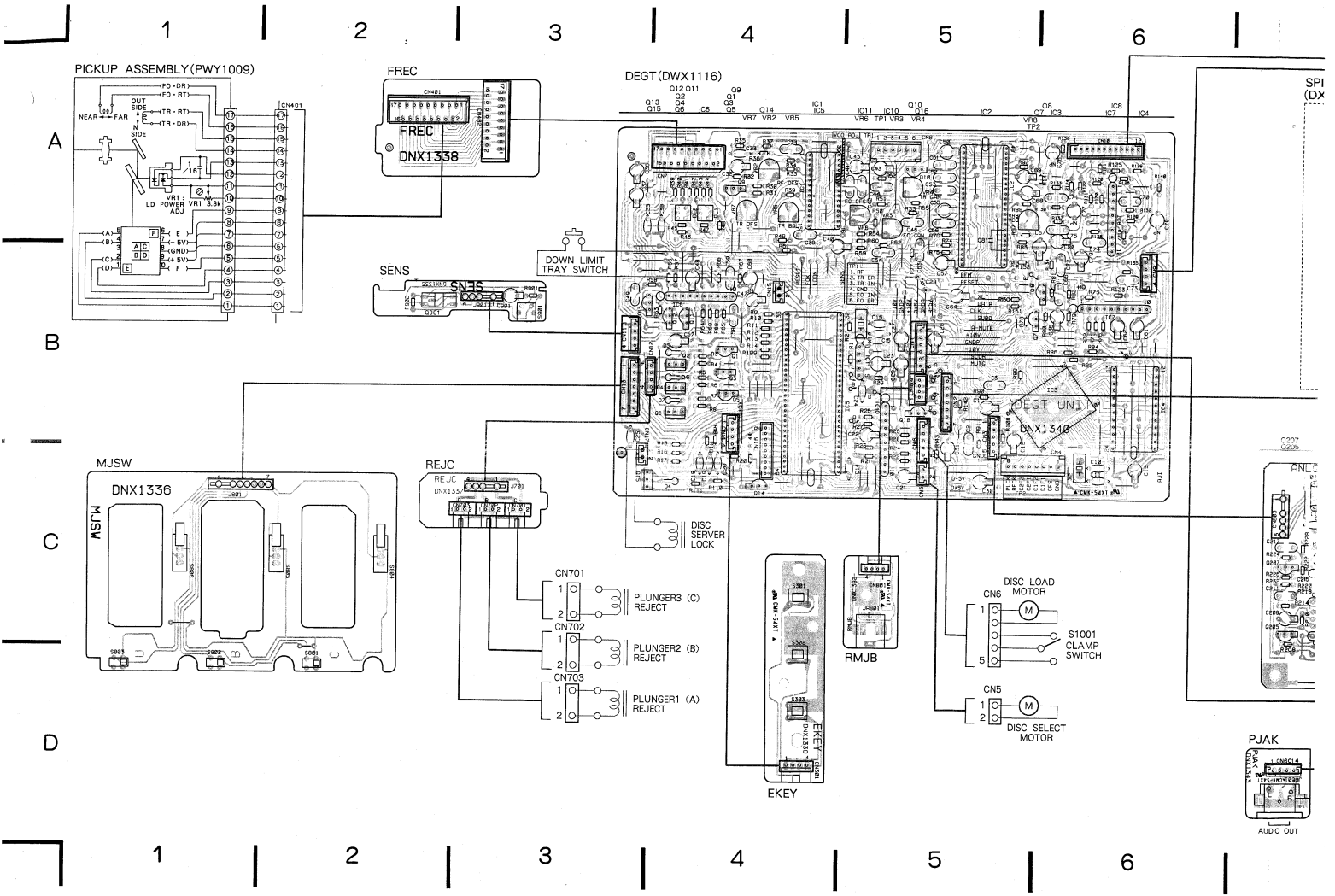
IC1	: CXA1081S	Q1,Q3,Q5,Q12,Q14	: DTA124ES	D4 - D7	: 1SS254
IC2	: CXA1082AS	Q2,Q4,Q6,Q15	: 2SC2497	VR2	: VRT86VS103
IC3	: CXD1135QZ	Q7,Q8,C11	: 2SC1740S	VR3 - VR7	: VRT86VS223
IC4	: CXK5816PN - 12L	Q9	: 2SA1399	VR8	: VRT86VS102
IC5	: PD00688	Q10	: DTC124ES	X1	: DSS1010
IC6 - IC8,IC10	: TA7256P	Q13	: 2SA933S	X2	: PSS - 012
IC11	: M51953BL			DL1,DL2	: PTF1012

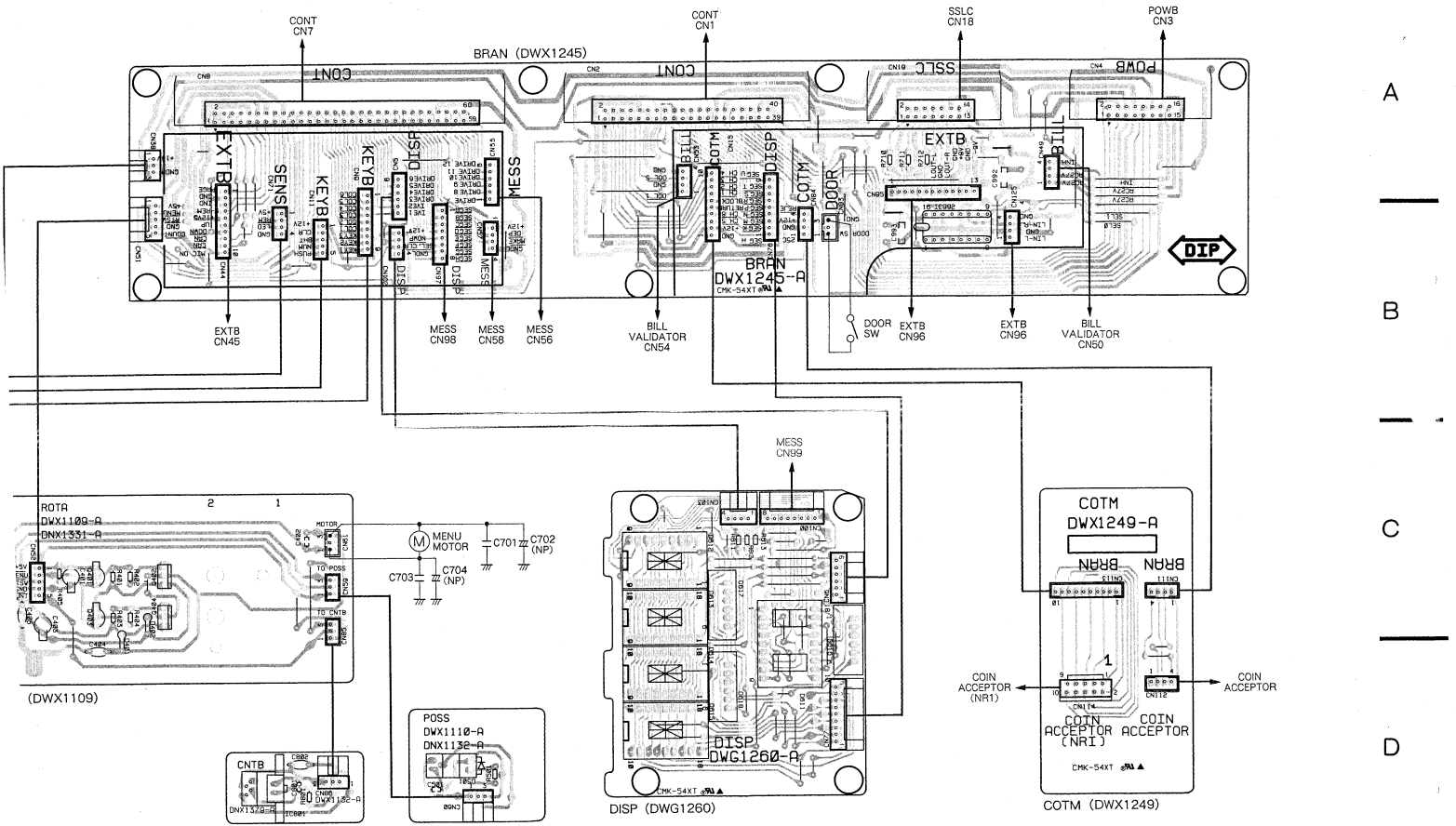
ANLG

IC201	: LC7881 - C	Q201,Q202	: DTC124ES	D201	: 2W02 - 5008
IC202,IC203	: NJM4558D	Q203,Q206	: DTA124ES	C201,C202	: RCG - 009
IC204	: NJM79L05A	Q205,Q208	: 2SD1302	F202 - F204	: VTH1001
IC205	: NJM7805FA	Q207,Q208	: 2SC1740S	L201	: VTL - 157
				C203	: VCH1050


IC202 : BUFFER
IC202 (2/2)
IC203 LOW PASS FILTER
IC203 (2/2)
IC205
IC204 : IC205 : REGULATOR
DTT1037
AC CORD
AC120V 60Hz
DDG1026
FU201 : REK-075
PJAK
PKB1009
AUDIO OUT
JA601
CONTROL
JA501
DJAK
C501 : DCG1007
IC202 (1/2)
IC203 (1/2)
Q207-Q209 : DE-EMPHASIS
Q203-Q206 : MUTING
Q201, Q202 BUFFER
IC204
HOUR METER
TU 701
HRMB
DISC LOAD MOTOR PXM1002
IC10 (1/2) DISC LOADING DRIVER
S1001: CLAMP SWITCH DSK1001
DISC SELECT MOTOR PXM1001
IC10 (2/2)
RMJB
JA801 DKN1028
IC3 : DECODER
EKEY
S301 - S303 : DSG1009
REJC
PLUNGER1 (A) REJECT
PLUNGER2 (B) REJECT
PLUNGER3 (C) REJECT
Q16 BUFFER
IC5 : SYSTEM CONTROL
Q1-Q6 : REJECT PLUNGER DRIVE
IC10 (2/2) : DISC SELECT DRIVER
IC11 : SYSTEM RESET
DEGT
DWX1116
IC4 : S-RAM
DISC SERVER LOCK
LOCK PLUNGER DRIVER
MJSW
S801 - S803 : PSH1008
S804 - S806 : PSH1005
DOWN LIMIT TRAY SWITCH DSH101
Q901 : COUNTER UP DOWN
SENS
Q901 : GP1A52HF
S901 : RSF1007
▶ Measurement point
Focos servo loop
Signal route
Traking servo loop
Carriage servo loop
Disc select motor route
Loading motor route
Spindle motor route


DEGT(DWX1116)
SPINDLE MOTOR ASSEMBLY (DXX1361)
SLIDER MOTOR PXM1002
SL.RT
SL.DR
GND
INSIDE
INSIDE SWITCH PSH1003
CN9
CN10
DEGT UNIT
DNX1340
ANLG (DWX1117)
ANLG UNIT
DNX1418
125V 315mA
POWER TRANSFORMER
AC120V 60Hz
DISC SERVER LOCK
PLUNGER3 (C) REJECT
PLUNGER2 (B) REJECT
PLUNGER1 (A) REJECT
RMJB
EKEY
DISC LOAD MOTOR
CN6
S1001 CLAMP SWITCH
CN5
DISC SELECT MOTOR
PJAK
DJAK
HRMB
AUDIO OUT
CONTROL
I LIMIT SWITCH


1
2
3
4
5
6
A
B
C
D
PICKUP ASSEMBLY(PWY1009)
FREC
FREC
DNX1338
DEGT(DWX1116)
SENS
DOWN LIMIT
TRAY SWITCH
DEGT UNIT
DNX1340
MJSW
DNX1336
REJC
DISC
SERVER
LOCK
CN701
PLUNGER3 (C)
REJECT
CN702
PLUNGER2 (B)
REJECT
CN703
PLUNGER1 (A)
REJECT
RMJB
EKEY
DISC LOAD
MOTOR
CN6
S1001
CLAMP
SWITCH
CN5
DISC SELECT
MOTOR
PJAK
AUDIO OUT

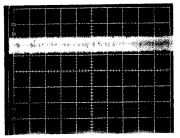

BRAN (DWX1245)
BRAN DWX1245-A
CMK-54XT
CONT CN7
CONT CN1
SSLC CN18
POWB CN3
EXTB CN45
MESS CN98
MESS CN58
MESS CN56
BILL VALIDATOR CN54
DOOR SW
EXTB CN96
EXTB CN96
BILL VALIDATOR CN50
MESS CN99
DIP
ROTR DWX1109-A DWX1331-A
(DWX1109)
MENU MOTOR
C701
C702 (NP)
C703
C704 (NP)
POSS DWX1110-A DNX1132-A
POSS (DWX1110)
CNTB
CNTB (DWX1132)
DISP DWG1260-A
DISP (DWG1260)
COTM DWX1249-A
COIN ACCEPTOR (NR1)
COIN ACCEPTOR
COIN ACCEPTOR (NRI)
COTM (DWX1249)

DECT (DMX1119)
DISC SELECT UNIT (DMX1240)
TIMING BELT SWITCH
DISC CLAMP SWITCH
DISC LOAD MOTOR
DISC SELECT MOTOR
PLUNGER SELECT (A)
PLUNGER SELECT (B)
PLUNGER SELECT (C)
PLUNGER SOLENOID
EKEA
BLMB
PLAK
HBMB
AMLG (DMX1117)
AMLG UNIT
SINGLE MOTOR ASSEMBLY (DXX1381)
POWER TRANSFORMER
AUDIO OUT
AC 230V 60Hz
1.25A 315mA

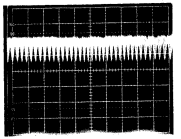
Wave Forms

NOTE : The encircled numbers denote measuring points in the schematic diagram.

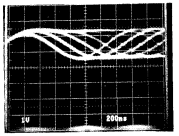
① CN7-5 Pin : PLAY MODE
50mV/div 5msec/div



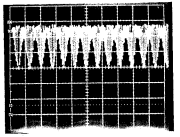
① CN7-5 Pin : SEARCH MODE
50mV/div 5msec/div



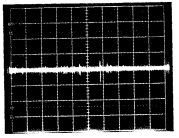
② TP1-1 Pin : PLAY MODE
1V/div 200nsec/div



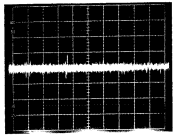
② TP1-1 Pin : SEARCH MODE
500mV/div 100μsec/div



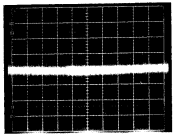
③ TP1-6 Pin : PLAY MODE
500mV/div 10msec/div



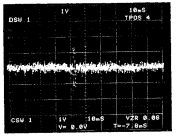
③ TP1-6 Pin : SEARCH MODE
500mV/div 10msec/div



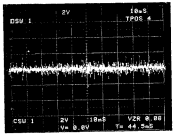
④ TP1-2 Pin : PLAY MODE
1V/div 10msec/div



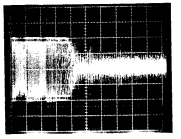
④ TP1-2 Pin : SEARCH MODE
1V/div 10msec/div



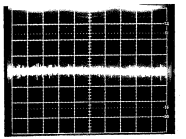
⑤ IC6-2 Pin : PLAY MODE
2V/div 10msec/div



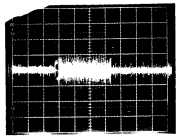
⑤ IC6-2 Pin : SEARCH MODE
2V/div 10msec/div



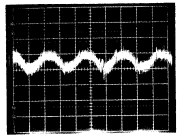
⑥ IC6-8 Pin : PLAY MODE
2V/div 10msec/div



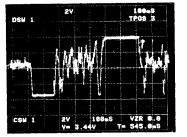
⑥ IC6-8 Pin : SEARCH MODE
2V/div 10msec/div



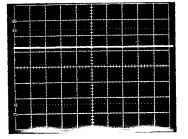
⑦ IC2-45 Pin : PLAY MODE
2V/div 10msec/div



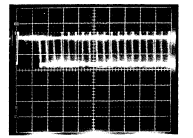
⑦ IC2-45 Pin : SEARCH MODE
2V/div 10msec/div



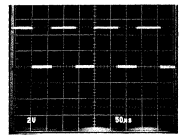
⑧ IC2-33, 34 Pin : PLAY MODE
2V/div 10msec/div



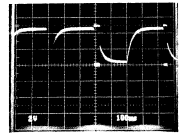
⑨ IC1-27 Pin : PLAY MODE
2V/div 500nsec/div



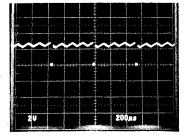
⑩ IC3-4 Pin : PLAY MODE
2V/div 50μsec/div



⑩ IC3-4 Pin : SEARCH MODE
2V/div 100msec/div

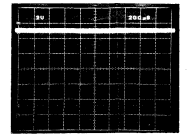


⑪ IC3-3 Pin : PLAY MODE
2V/div 200μsec/div

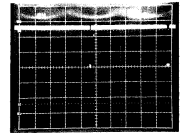


⑪ IC3-3 Pin : SEARCH MODE
2V/div 10msec/div

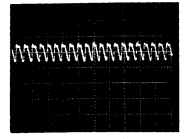
⑫ TP2-2 Pin : PLAY MODE
2V/div 200μsec/div



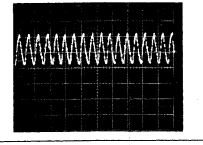
⑫ TP2-2 Pin : SEARCH MODE
2V/div 200μsec/div



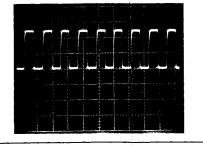
⑬ IC2-38 Pin : PLAY MODE
2V/div 200nsec/div



⑭ IC3-8 Pin : PLAY MODE
2V/div 200nsec/div

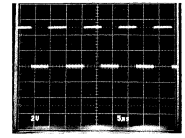


⑮ TP2-8 Pin : PLAY MODE
2V/div 200nsec/div

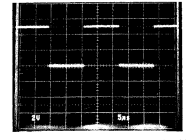


⑯ IC3-76 Pin : STOP MODE
2V/div 200nsec/div

⑰ IC3-79 Pin : STOP MODE
2V/div 5μsec/div



⑱ IC3-80 Pin : STOP MODE
2V/div 5μsec/div



uring points in the

ODE
div

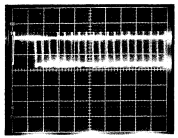
MODE
div

ODE
iv

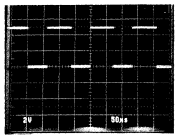
MODE
v

DE

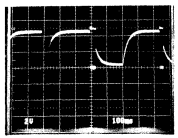
⑨ IC1-27 Pin : PLAY MODE
2V/div 500nsec/div



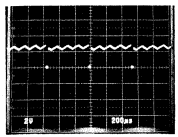
⑩ IC3-4 Pin : PLAY MODE
2V/div 50μsec/div



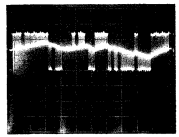
⑩ IC3-4 Pin : SEARCH MODE
2V/div 100msec/div



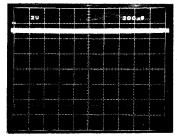
⑪ IC3-3 Pin : PLAY MODE
2V/div 200μsec/div



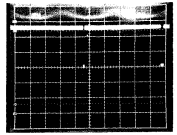
⑪ IC3-3 Pin : SEARCH MODE
2V/div 10msec/div



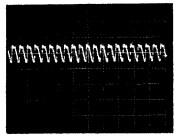
⑫ TP2-2 Pin : PLAY MODE
2V/div 200μsec/div



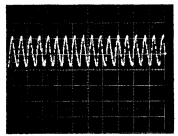
⑫ TP2-2 Pin : SEARCH MODE
2V/div 200μsec/div



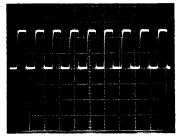
⑬ IC2-38 Pin : PLAY MODE
2V/div 200nsec/div



⑭ IC3-8 Pin : PLAY MODE
2V/div 200nsec/div

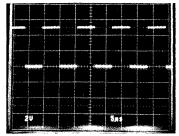


⑮ TP2-8 Pin : PLAY MODE
2V/div 200nsec/div

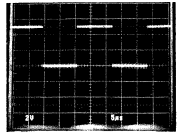


⑯ IC3-76 Pin : STOP MODE
2V/div 200nsec/div

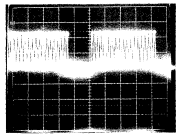
⑰ IC3-79 Pin : STOP MODE
2V/div 5μsec/div



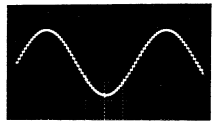
⑱ IC3-80 Pin : STOP MODE
2V/div 5μsec/div



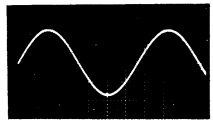
⑲ IC201-9 Pin : PLAY MODE
2V/div 0.5μsec/div



⑳ IC202-1 Pin : PLAY MODE
2V/div 50μsec/div

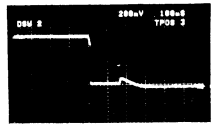


㉑ OUTPUT Lch : PLAY MODE
2V/div 50μsec/div

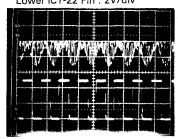


㉒ IC11-5 Pin : POWER ON
2V/div 100msec/div

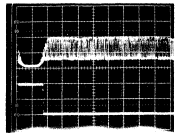
㉒ IC11-5 Pin : POWER OFF
2V/div 100msec/div



㉓ IC1-22 Pin : TRACKING OPEN
0.1msec/div
Upper TP1-1 Pin : 1V/div
Lower IC1-22 Pin : 2V/div



㉔ IC1-21 Pin : DFCT 0.5msec/div
Upper TP1-1 Pin : 1V/div
Lower IC1-21 Pin : 5V/div



6. P. C. B PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

560 Ω→ 56 × 10¹ →561 ····· RD1/4PS 5 6 1 J
47k Ω→ 47 × 10³ →473 ····· RD1/4PS 4 7 3 J
0.5 Ω→ 0R5 ····· RN2H 0 R 5 K
1 Ω→ 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

5.62k Ω→ 562 × 10¹ →5621 ····· RN1/4SR 5 6 2 1 F

6.1 MAIN SECTION

Mark	No.	Description	Part No.
◉ **CONT(DWG1250)**			
SEMICONDUCTORS			
	IC1		M50747SP
	IC10	IC	MC145406P
	IC11	SYSTEM PRESET IC	M5295L
	IC12, 13	LOGIC IC	TC74HC14AP
	IC14, 15	LOGIC IC	TC74HC00AP
	IC16	LOGIC IC	TC74HC4002AP
	IC17	LOGIC IC	SN74LS05N
	IC18	TRANSISTOR ARRAY	M54564P
	IC19	TRANSISTOR ARRAY	M54584P
	IC2	CMOS S-RAM	HM62256LP1-12
	IC20	TRANSISTOR ARRAY	M54564P
	IC21	LOGIC IC	TC74HC191AP
	IC22	LOGIC IC	TC74HC74AP
	IC23	IC	UPD71051C
	IC24	LOGIC IC	TC74HC14AP
	IC26	LOGIC IC	TC74HC08AP
	IC3	IC	PD5178A
	IC4, 5	IC	CXD1095Q
	IC6	IC(REAL TIME CLOCK)	TC8250P
	IC7	IC	PD5027
	IC8	TRANSISTOR ARRAY	M54584P
	IC9	MULTIPLEXOR	TC74HC4052AP
	Q1	TRANSISTOR	2SC3246
	Q10, 11	TRANSISTOR	DTC124ES
	Q12	TRANSISTOR	DTC114ES
	Q13	TRANSISTOR	2SC3246
	Q14	TRANSISTOR	DTC124ES
	Q15, 16	TRANSISTOR	DTA124ES
	Q17	TRANSISTOR	DTC124ES
	Q2, 3	TRANSISTOR	2SC1740S
	Q36	TRANSISTOR	2SC1740S
	Q37	TRANSISTOR	2SA1015
	Q38, 39	TRANSISTOR	2SC1740S
	Q4	TRANSISTOR	DTC124ES
	Q44-46	TRANSISTOR	DTC124ES
	Q47	TRANSISTOR	2SC1740S
	Q48	TRANSISTOR	DTA124ES
	Q49	TRANSISTOR	DTC124ES
	Q5	TRANSISTOR	2SA1015
	Q50, 56	TRANSISTOR	DTC124ES
	Q57	TRANSISTOR	DTC124ES
	Q6	TRANSISTOR	2SC1740S
	Q7, 8	TRANSISTOR	DTA124ES
	Q89, 9	TRANSISTOR	DTA124ES
	Q90	TRANSISTOR	DTA124ES
	Q91-96	TRANSISTOR	DTC114ES
	D1	DIODE	1SS254
	D10, 11	LED	SEL2215S
	D12, 13	DIODE	1SS254
	D17-19	DIODE	1SS254
	D2, 20	DIODE	1SS254
	D3, 4	DIODE	1SS254
	D5	RECTIFIER DIODE	1SR139-400
	D7-9	LED	SEL2215S
COILS AND FILTERS			
	L1-3	RADIAL INDUCTOR	LFA010K
	F1		VTH1001
	F10-19		VTH1001
	F2		VTH1001
	F20-23		VTH1001
	F24		VTH1006
	F25		VTH1001
	F26, 27		VTH1006
	F28, 29		VTH1001
	F3		VTH1001
	F32-39		VTH1001
	F4		VTH1001
	F40-49		VTH1001
	F5		VTH1001
	F50-53		VTH1001
	F6-9		VTH1001

Mark	No.	Description	Part No.
CAPACITORS			
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	ELECTR. CAPACITOR	CEAS330M16
	C100	CERAMIC CAPACITOR	CKPUYB102K50
	C101	CERAMIC CAPACITOR	CKCYF102Z50
	C102-107	CERAMIC CAPACITOR	CKCYF103Z50
	C108	CAPACITOR ARRAY (2200p×8)	DCG1004
	C109	CAPACITOR ARRAY (2200p×6)	DCG1005
	C11	CERAMIC CAPACITOR	CKPUYY103N16
	C110	CAPACITOR ARRAY (2200p×6)	DCG1005
	C111	CERAMIC CAPACITOR	CKPUYY103N16
	C112	CERAMIC CAPACITOR	CKCYF103Z50
	C113	CERAMIC CAPACITOR	CKCYF102Z50
	C114	CERAMIC CAPACITOR	CKCYF103Z50
	C115	MYLAR FILM CAPACITOR	CQMA223J50
	C116	ELECTR. CAPACITOR	CEAS330M16
	C117	CERAMIC CAPACITOR	CKCYF103Z50
	C118, 119	CERAMIC CAPACITOR	CKPUYY103N16
	C12	ELECTR. CAPACITOR	CEAS330M16
	C120	ELECTR. CAPACITOR	CEAS471M10
	C124	CAPACITOR ARRAY (2200p×6)	DCG1005
	C125	CERAMIC CAPACITOR	CKPUYY103N16
	C13-15	CERAMIC CAPACITOR	CKCYF103Z50
	C16	CERAMIC CAPACITOR	CKPUYY103N16
	C17	ELECTR. CAPACITOR	CEAS330M16
	C18	ELECTR. CAPACITOR	CEAS3R3M50
	C19	CERAMIC CAPACITOR	CKCYF103Z50
	C2	ELECTR. CAPACITOR	CEAS330M16
	C20	CERAMIC CAPACITOR	CKCYF103Z50
	C21	ELECTROLYTIC CAPACIT	CEAS332M6R3
	C22, 23	CERAMIC CAPACITOR	CKCYF103Z50
	C24	CAPACITOR ARRAY (2200p×8)	DCG1004
	C25, 26	CERAMIC CAPACITOR	CKCYF103Z50
	C27	ELECTR. CAPACITOR	CEAS330M16
	C28	CERAMIC CAPACITOR	CKCYF103Z50
	C29	CAPACITOR ARRAY (2200p×6)	DCG1005
	C3	CERAMIC CAPACITOR	CKPUYY103N16
	C30	CERAMIC CAPACITOR	CKCYF103Z50
	C31, 32	AXIAL CERAMIC C.	CCPUCH150J50
	C33	CERAMIC CAPACITOR	CKCYF103Z50
	C34	ELECTR. CAPACITOR	CEAS330M16
	C35	CERAMIC CAPACITOR	CKCYF103Z50
	C37, 38	CERAMIC CAPACITOR	CCCSL151J50
	C39	CERAMIC CAPACITOR	CKCYF103Z50
	C4	ELECTR. CAPACITOR	CEAS330M16
	C40	CERAMIC CAPACITOR	CKCYF103Z50
	C41	ELECTR. CAPACITOR	CEAS330M16
	C42	CERAMIC CAPACITOR	CKPUYY103N16
	C43	ELECTR. CAPACITOR	CEAS330M16
	C45	CAPACITOR ARRAY (2200p×8)	DCG1004
	C46	CERAMIC CAPACITOR	CKCYF103Z50
	C47	ELECTR. CAPACITOR	CEAS330M16
	C48	CERAMIC CAPACITOR	CKCYF103Z50
	C49	CERAMIC CAPACITOR	CKCYF222Z50
	C5	CERAMIC CAPACITOR	CKCYF103Z50
	C50	1F CAPACITOR	DCH1004
	C51	ELECTR. CAPACITOR	CEAS4R7M50
	C52, 54	CERAMIC CAPACITOR	CKCYF103Z50
	C55	CERAMIC CAPACITOR	CKCYF103Z50
	C56	CERAMIC CAPACITOR	CKCYF102Z50
	C57	CERAMIC CAPACITOR	CKCYF103Z50
	C58	CAPACITOR ARRAY (2200p×8)	DCG1004
	C59	CERAMIC CAPACITOR	CKCYF103Z50
	C6, 60	ELECTR. CAPACITOR	CEAS330M16
	C61	CAPACITOR ARRAY (2200p×6)	DCG1005
	C62	CAPACITOR ARRAY (2200p×8)	DCG1004
	C63, 64	CERAMIC CAPACITOR	CKCYF103Z50
	C65, 66	CERAMIC CAPACITOR	CCCCH100D50
	C67	CERAMIC CAPACITOR	CKCYF103Z50
	C68	CERAMIC CAPACITOR	CKPUYB102K50
	C7	CERAMIC CAPACITOR	CKPUYY103N16
	C70	CAPACITOR ARRAY (2200p×8)	DCG1004
	C71	CAPACITOR ARRAY (2200p×6)	DCG1005
	C72	CERAMIC CAPACITOR	CKCYF103Z50
	C73	CERAMIC CAPACITOR	CKCYF102Z50
	C77	ELECTR. CAPACITOR	CEAS471M10
	C79	CERAMIC CAPACITOR	CKCYF103Z50
	C8	ELECTR. CAPACITOR	CEAS330M16
	C81, 82	CERAMIC CAPACITOR	CKCYF103Z50
	C83	ELECTR. CAPACITOR	CEAS330M16
	C84	CERAMIC CAPACITOR	CKCYF103Z50
	C85	CERAMIC CAPACITOR	CCCCH101J50
	C87	CERAMIC CAPACITOR	CKCYF103Z50
	C89, 9	CERAMIC CAPACITOR	CKCYF103Z50
	C91, 93	CERAMIC CAPACITOR	CKCYF103Z50
	C94	ELECTR. CAPACITOR	CEAS330M16
	C95, 96	CERAMIC CAPACITOR	CKCYF103Z50
	C97	CERAMIC CAPACITOR	CKPUYY103N16
	C98	CERAMIC CAPACITOR	CKCYF103Z50
	C99	CERAMIC CAPACITOR	CKCYF102Z50
RESISTORS			
	R113, 120	RESISTOR ARRAY (10kΩ)	RA7103J
	R13	RESISTOR ARRAY (10kΩ)	RA8T103J
	R23	RESISTOR ARRAY (4.7kΩ)	RA8S472J
	R59	RESISTOR ARRAY (10kΩ)	RA8T103J
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	PIEZOELECTRIC BUZZER		DPX1002
	IC SOCKET(28-P)		VKH-027
	CN1	CONNECTOR	RA-H401SD
	CN7	CONNECTOR	RA-H602SD
	X1	CRYSTAL RESONATOR	DSS1001
	X2	CERAMIC RESONATOR (400kHz)	VSS-041
	X3	CRYSTAL RESONATOR	DSS1014
◉ **DISP (DWG1260)**			
SEMICONDUCTORS			
	D611	LED	LN526RA(Y)
	D612-615	LED	TLR371
	D616-618	LED	LT9010D
RESISTORS			
	R611-613	CARBON FILM RESISTOR	RD1/6PM561J

Mark	No.
◉ **MESS (I**	
SEMICONDU	
	D151, 1
	D153-1
	D156-1
	D159-1
	D168, 1
	D170
	D171, 1
	D173
	D174-1
RESISTORS	
	ALL RES
◉ **ILLM (D**	
SEMICONDU	
	IC811
	IC812
	IC813
	IC814-(
	IC818
	D811-8
	D851-8
	D868
	D869-8
	D886-9
	D923-9
	D936, 9
	D938
	D939, 9
	D941
	D942, 9
	D944-9
	D948, 9
	D950-9
	D954, 9
	D956-9
	D959-9
FILTER	
	F811
CAPACITOF	
	C813
	C814, 8
	C816
	C817-8
	C824, 8
	C826
	C827
	C828, 8
RESISTORS	
	R888
	OTHER

Mark	No.	Description	Part No.
CAPACITORS			
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	ELECTR. CAPACITOR	CEAS330M16
	C100	CERAMIC CAPACITOR	CKPUYB102K50
	C101	CERAMIC CAPACITOR	CKCYF102Z50
	C102-107	CERAMIC CAPACITOR	CKCYF103Z50
	C108	CAPACITOR ARRAY (2200p×8)	DCG1004
	C109	CAPACITOR ARRAY (2200p×6)	DCG1005
	C11	CERAMIC CAPACITOR	CKPUYY103N16
	C110	CAPACITOR ARRAY (2200p×6)	DCG1005
	C111	CERAMIC CAPACITOR	CKPUYY103N16
	C112	CERAMIC CAPACITOR	CKCYF103Z50
	C113	CERAMIC CAPACITOR	CKCYF102Z50
	C114	CERAMIC CAPACITOR	CKCYF103Z50
	C115	MYLAR FILM CAPACITOR	CQMA223J50
	C116	ELECTR. CAPACITOR	CEAS330M16
	C117	CERAMIC CAPACITOR	CKCYF103Z50
	C118, 119	CERAMIC CAPACITOR	CKPUYY103N16
	C12	ELECTR. CAPACITOR	CEAS330M16
	C120	ELECTR. CAPACITOR	CEAS471M10
	C124	CAPACITOR ARRAY (2200p×6)	DCG1005
	C125	CERAMIC CAPACITOR	CKPUYY103N16
	C13-15	CERAMIC CAPACITOR	CKCYF103Z50
	C16	CERAMIC CAPACITOR	CKPUYY103N16
	C17	ELECTR. CAPACITOR	CEAS330M16
	C18	ELECTR. CAPACITOR	CEAS8R3M50
	C19	CERAMIC CAPACITOR	CKCYF103Z50
	C2	ELECTR. CAPACITOR	CEAS330M16
	C20	CERAMIC CAPACITOR	CKCYF103Z50
	C21	ELECTROLYTIC CAPACIT	CEAS332M6R3
	C22, 23	CERAMIC CAPACITOR	CKCYF103Z50
	C24	CAPACITOR ARRAY (2200p×8)	DCG1004
	C25, 26	CERAMIC CAPACITOR	CKCYF103Z50
	C27	ELECTR. CAPACITOR	CEAS330M16
	C28	CERAMIC CAPACITOR	CKCYF103Z50
	C29	CAPACITOR ARRAY (2200p×6)	DCG1005
	C3	CERAMIC CAPACITOR	CKPUYY103N16
	C30	CERAMIC CAPACITOR	CKCYF103Z50
	C31, 32	AXIAL CERAMIC C.	CCPUCH150J50
	C33	CERAMIC CAPACITOR	CKCYF103Z50
	C34	ELECTR. CAPACITOR	CEAS330M16
	C35	CERAMIC CAPACITOR	CKCYF103Z50
	C37, 38	CERAMIC CAPACITOR	CCCSL151J50
	C39	CERAMIC CAPACITOR	CKCYF103Z50
	C4	ELECTR. CAPACITOR	CEAS330M16
	C40	CERAMIC CAPACITOR	CKCYF103Z50
	C41	ELECTR. CAPACITOR	CEAS330M16
	C42	CERAMIC CAPACITOR	CKPUYY103N16
	C43	ELECTR. CAPACITOR	CEAS330M16
	C45	CAPACITOR ARRAY (2200p×8)	DCG1004
	C46	CERAMIC CAPACITOR	CKCYF103Z50
	C47	ELECTR. CAPACITOR	CEAS330M16
	C48	CERAMIC CAPACITOR	CKCYF103Z50
	C49	CERAMIC CAPACITOR	CKCYF222Z50
	C5	CERAMIC CAPACITOR	CKCYF103Z50
	C50	1F CAPACITOR	DCH1004

Mark	No.	Description	Part No.
	C51	ELECTR. CAPACITOR	CEAS4R7M50
	C52, 54	CERAMIC CAPACITOR	CKCYF103Z50
	C55	CERAMIC CAPACITOR	CKCYF103Z50
	C56	CERAMIC CAPACITOR	CKCYF102Z50
	C57	CERAMIC CAPACITOR	CKCYF103Z50
	C58	CAPACITOR ARRAY (2200p×8)	DCG1004
	C59	CERAMIC CAPACITOR	CKCYF103Z50
	C6, 60	ELECTR. CAPACITOR	CEAS330M16
	C61	CAPACITOR ARRAY (2200p×6)	DCG1005
	C62	CAPACITOR ARRAY (2200p×8)	DCG1004
	C63, 64	CERAMIC CAPACITOR	CKCYF103Z50
	C65, 66	CERAMIC CAPACITOR	CCCCH100D50
	C67	CERAMIC CAPACITOR	CKCYF103Z50
	C68	CERAMIC CAPACITOR	CKPUYB102K50
	C7	CERAMIC CAPACITOR	CKPUYY103N16
	C70	CAPACITOR ARRAY (2200p×8)	DCG1004
	C71	CAPACITOR ARRAY (2200p×6)	DCG1005
	C72	CERAMIC CAPACITOR	CKCYF103Z50
	C73	CERAMIC CAPACITOR	CKCYF102Z50
	C77	ELECTR. CAPACITOR	CEAS471M10
	C79	CERAMIC CAPACITOR	CKCYF103Z50
	C8	ELECTR. CAPACITOR	CEAS330M16
	C81, 82	CERAMIC CAPACITOR	CKCYF103Z50
	C83	ELECTR. CAPACITOR	CEAS330M16
	C84	CERAMIC CAPACITOR	CKCYF103Z50
	C85	CERAMIC CAPACITOR	CCCCH101J50
	C87	CERAMIC CAPACITOR	CKCYF103Z50
	C89, 9	CERAMIC CAPACITOR	CKCYF103Z50
	C91, 92	CERAMIC CAPACITOR	CKCYF103Z50
	C94	ELECTR. CAPACITOR	CEAS330M16
	C95, 96	CERAMIC CAPACITOR	CKCYF103Z50
	C97	CERAMIC CAPACITOR	CKPUYY103N16
	C98	CERAMIC CAPACITOR	CKCYF103Z50
	C99	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	R113, 120	RESISTOR ARRAY (10kΩ)	RA7T103J
	R13	RESISTOR ARRAY (10kΩ)	RA8T103J
	R23	RESISTOR ARRAY (4.7kΩ)	RA8S472J
	R59	RESISTOR ARRAY (10kΩ)	RA8T103J
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
		PIEZOELECTRIC BUZZER	DPX1002
		IC SOCKET(28-P)	VKH-027
	CN1	CONNECTOR	RA-H401SD
	CN7	CONNECTOR	RA-H602SD
	X1	CRYSTAL RESONATOR	DSS1001
	X2	CERAMIC RESONATOR (400kHz)	VSS-041
	X3	CRYSTAL RESONATOR	DSS1014

◉ DISP (DWG1260)

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	D611	LED	LN526RA(V)
	D612-615	LED	TLR371
	D616-618	LED	LT9010D
RESISTORS			
	R611-613	CARBON FILM RESISTOR	RD1/6PM561J

◉ MESS (DWG1261)

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	D151, 152	LED	LN0401RP2
	D153-155	LED	LN0603RP2
	D156-158	LED	LT3010E
	D159-167	LED	LN0401GP3
	D168, 169	LED	LN0603GP3
	D170	LED	LN0401GP3
	D171, 172	LED	LN0603GP3
	D173	LED	LN0401GP3
	D174-176	LED	LB202MB
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J

◉ ILLM (DWG1262)

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC811	CPU	PD4378A
	IC812	TRANSISTOR ARRAY	M54513P
	IC813	LED	BU2114
	IC814-817	TRANSISTOR ARRAY	M54513P
	IC818	SYSTEM PRESET IC	M5295L
	D811-850	LED	SEL6C10S
	D851-867	LED	SEL6910A
	D868	LED	SEL6C10S
	D869-885	LED	SEL6910A
	D886-922	LED	SEL6410E
	D923-935	LED	SEL6C10S
	D936, 937	LED	SEL6410E
	D938	LED	SEL6C10S
	D939, 940	LED	SEL6910A
	D941	LED	SEL6C10S
	D942, 943	LED	SEL6410E
	D944-947	LED	SEL6910A
	D948, 949	LED	SEL6410E
	D950-953	LED	SEL6910A
	D954, 955	LED	SEL6410E
	D956-958	LED	SEL6910A
	D959-962	LED	SEL6C10S
FILTER			
	F811		VTH1001
CAPACITORS			
	C813	CERAMIC CAPACITOR	CKCYF103Z50
	C814, 815	CERAMIC CAPACITOR	CKCYF102Z50
	C816	ELECTR. CAPACITOR	CEAS470M16
	C817-822	CERAMIC CAPACITOR	CKCYF103Z50
	C824, 825	CERAMIC CAPACITOR	CKCYF103Z50
	C826	ELECTROLYTIC CAPACIT	CEAS100M16
	C827	MYLAR FILM CAPACITOR	CQMA223J50
	C828, 829	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	R888	RESISTOR ARRAY (10kΩ)	RA8S103J
	OTHER RESISTORS		RD1/6PM□□□J

Mark	No.	Description	Part No.
OTHERS			
	X811	CERAMIC RESONATOR	VSS1014

◉ PAMP (DWH1008)

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC511	AUDIO IC	STK4231-2
	IC512	AUDIO IC	STK4152-2GP
	IC513	REGULATOR IC	NJM7812FA
	IC514	REGULATOR IC	NJM7805FA
	Q511, 512	TRANSISTOR	2SC1775
	Q513-516	TRANSISTOR	2SC1740S
	Q517-520	TRANSISTOR	2SA970
	Q521, 522	TRANSISTOR	2SA933S
	Q523, 524	TRANSISTOR	2SC1740S
	Q525, 526	TRANSISTOR	2SA1283
	D511, 512	DIODE	1SS142
	D513, 514	DIODE	1SS254
	D515-518	DIODE	1SR35-100AVL
	D519, 520	ZENER DIODE	MTZJ6.8B
	D521-524	DIODE	1SR35-100AVL
⚠	D525	DIODE	S2VB10F
	D526, 527	LED	SEL2215S
RELAYS			
	RY511, 512	RELAY	RSR1014
COILS			
	L511-514	COIL	DTH1116
CAPACITORS			
	C511, 512	CERAMIC CAPACITOR	CKCYB222K50
	C513, 514	ELECTR. CAPACITOR	CEASR22M50
	C515, 516	ELECTR. CAPACITOR	CEAS101M10
	C517, 518	ELECTR. CAPACITOR	CEAS470M50
	C519	CAPACITOR (ALUMINUM) (10μ/100V)	DCH1022
	C520	ELECTR. CAPACITOR	CEAS100M50
	C521	ELECTR. CAPACITOR (100μ/100V)	DCH1019
	C522	ELECTR. CAPACITOR	CEAS101M50
	C523, 524	ELECTR. CAPACITOR	CEAS101M10
	C525, 526	ELECTR. CAPACITOR	CEAS470M50
	C527, 528	ELECTR. CAPACITOR	CEASR22M50
	C529, 530	CERAMIC CAPACITOR	CKCYB222K50
	C531, 532	ELECTR. CAPACITOR (33μ/100V)	DCH1018
	C533, 534	ELECTR. CAPACITOR	CEAS330M50
	C535, 536	ELECTR. CAPACITOR	CEAS4R7M50
	C537, 538	ELECTR. CAPACITOR	CEAS471M10
	C539, 540	ELECTR. CAPACITOR	CEAS221M16
	C541-548	AUDIO FILM CAPACITOR	CFTXA104J50
	C549, 550	ELECTR. CAPACITOR	CEAS101M50
	C551, 552	ELECTR. CAPACITOR	CEAS010M50
	C553, 554	ELECTR. CAPACITOR	CEAS101M50
	C555	CERAMIC CAPACITOR	CKCYF103Z50
	C556	ELECTR. CAPACITOR	CEAS332M35
	C557, 558	ELECTR. CAPACITOR	CEAS470M25

Mark	No.	Description	Part No.
RESISTORS			
⚠	R515, 516	CARBON FILM RESISTOR	RD1/2LF681J
	R519	CARBON FILM RESISTOR	RD1/4VM472J
⚠	R521	CARBON FILM RESISTOR	RD1/2LF472J
⚠	R522	CARBON FILM RESISTOR	RD1/2LF222J
⚠	R523, 524	CARBON FILM RESISTOR	RD1/2LF101J
⚠	R525-528	CARBON FILM RESISTOR	RD1/2LF102J
⚠	R529, 530	CARBON FILM RESISTOR	RD1/2LF181J
	R531	CARBON FILM RESISTOR	RD1/4VM472J
⚠	R533	CARBON FILM RESISTOR	RD1/2LF472J
⚠	R534	CARBON FILM RESISTOR	RD1/2LF222J
⚠	R537, 538	CARBON FILM RESISTOR	RD1/2LF681J
⚠	R575-578	RESISTOR (0.47Ω×2)	DCN1020
⚠	R579-586	CARBON FILM RESISTOR	RD1/2LF100J
⚠	R593, 594	CARBON FILM RESISTOR	RD1/2LF561J
⚠	R596	CARBON FILM RESISTOR	RD1/2LF470J
	OTHER RESISTORS		RD1/6PM□□□J

◉ TCMX (DWK1031)

SEMICONDUCTORS			
	IC211-214	OP-AMP IC	NJM4558DX
	Q211-214	TRANSISTOR	2SC1740S
SWITCHES			
	S211, 212	SLIDE SWITCH (STEREO/MONO(for high power), STEREO/MONO(for low power))	DSH-106
CAPACITORS			
	C211, 212	ELECTR. CAPACITOR	CEAS4R7M50
	C213, 214	ELECTR. CAPACITOR	CEAS220M25
	C215-218	ELECTR. CAPACITOR	CEAS4R7M50
	C219, 220	MYLAR FILM CAPACITOR	CQMA123J50
	C221, 222	AUDIO FILM CAPACITOR	CFTXA473J50
	C223, 224	MYLAR FILM CAPACITOR	CQMA123J50
	C225, 226	MYLAR FILM CAPACITOR	CQMA682J50
	C227, 228	ELECTROLYTIC CAPACIT	CEANP4R7M25
	C229, 230	ELECTR. CAPACITOR	CEAS220M25
	C231-238	ELECTR. CAPACITOR	CEAS4R7M50
	C239-242	ELECTROLYTIC CAPACIT	CEANP4R7M25
	C243-246	ELECTR. CAPACITOR	CEAS220M25
	C247-250	ELECTROLYTIC CAPACIT	CEANP4R7M25
	C273, 274	ELECTR. CAPACITOR	CEAS220M25
RESISTORS			
	VR211, 212	VARIABLE RESISTOR (100kΩ)	DCS1014
	VR213, 214	VARIABLE RESISTOR (20kΩ)	DCS1019
	OTHER RESISTORS		RD1/6PM□□□□

◉ EXTB (DWK1032)

SEMICONDUCTORS			
	IC351	OP-AMP IC	NJM4558DX
	Q351, 352	TRANSISTOR	2SC1740S
	Q353	TRANSISTOR	2SA1309A
	Q354	TRANSISTOR	2SC1740S
	Q355	TRANSISTOR	DTA144ES
	D352, 354	ZENER DIODE	MTZ5.6B
	D355-358	ZENER DIODE	MTZ5.6B

Mark	No.	Description	Part No.
COIL			
	L352	RADIAL INDUCTOR	LFA010K
CAPACITORS			
	C351-354	CERAMIC CAPACITOR	CKCYF102Z50
	C355, 356	CERAMIC CAPACITOR	CKCYF103Z50
	C357-359	CERAMIC CAPACITOR	CKCYF473Z50
	C360	ELECTR. CAPACITOR	CEAS4R7M50
	C361	CERAMIC CAPACITOR	CKCYF473Z50
	C362	ELECTR. CAPACITOR	CEAS010M50
	C363	CERAMIC CAPACITOR	CKCYF103Z50
	C364	CERAMIC CAPACITOR	CCCSL121J50
	C365, 366	ELECTR. CAPACITOR	CEAS101M25
	C367	ELECTR. CAPACITOR	CEAS4R7M50
	C368	CERAMIC CAPACITOR	CKCYF103Z50
	C369	CERAMIC CAPACITOR	CKCYF473Z50
	C370	CERAMIC CAPACITOR	CKCYF103Z50
	C371	CERAMIC CAPACITOR	CKCYF102Z50
	C372-379	CERAMIC CAPACITOR	CKCYF103Z50
	C380-384	ELECTR. CAPACITOR	CEAS4R7M50
	C385	ELECTR. CAPACITOR	CEAS471M10
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
OTHERS			
	SPEAKER TERMINAL 10P		DKE1008
	JA351	JACK	RKB-020
	JA352	MIC JACK	VKN1037
	JA353	STEREO MINI JACK	VKN-177
	JA354, 355	SOCKET	VKN1012

◉ LACN (DWX1248)

There is not supplied parts in this unit.

◉ COTM (DWX1249)

There is not supplied parts in this unit.

◉ SSLC(DWK1033)

SEMICONDUCTORS			
	IC401	LOGIC IC	TC4052BP
	IC402	E-VR IC	TC9154AP
	IC404-408	OP-AMP IC	NJM4558DX
	IC410	OP-AMP IC	NJM4558DX
	IC411	REGULATOR IC	NJM79L06A
	IC412	REGULATOR IC	NJM78L06A
	Q403, 404	TRANSISTOR	2SC1740S
	Q405	TRANSISTOR	2SA933S
	Q406, 407	TRANSISTOR	2SA1309A
	Q408	TRANSISTOR	DTA124ES
	D408	DIODE	1SS254
	D407	ZENER DIODE	MTZ7.5B
SWITCH			
	S401	SLIDE SWITCH (STEREO/MONO(for EXT input))	DSH-106

Mark	No.	Description	Part No.
CAPACITORS			
	C402, 403	ELECTR. CAPACITOR	CEAS4R7M50
	C404, 405	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C406	ELECTR. CAPACITOR	CEAS4R7M50
	C407, 408	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C409	ELECTR. CAPACITOR	CEAS4R7M50
	C411, 412	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C413-418	ELECTR. CAPACITOR	CEAS4R7M50
	C419-422	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C423	ELECTR. CAPACITOR	CEAS221M16
	C424	CAPACITOR ARRAY	DCG1016
	C425-428	ELECTR. CAPACITOR	CEAS220M25
	C429, 430	ELECTR. CAPACITOR	CEAS220M25
	C433, 434	CERAMIC CAPACITOR	CGCYX473M25
	C435, 436	ELECTR. CAPACITOR	CEAS220M25
	C440	ELECTR. CAPACITOR	CEAS220M25
	C441-444	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C447, 448	ELECTR. CAPACITOR	CEAS220M25
	C451, 452	ELECTR. CAPACITOR	CEAS220M25
	C453, 454	CERAMIC CAPACITOR	CKCYB272K50
	C455, 456	ELECTR. CAPACITOR	CEAS220M25
RESISTORS			
	VR401, 402	VARIABLE RESISTOR (100kΩ)	DCS1010
	R439	RESISTOR ARRAY (10kΩ)	RA5T103J
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	CN01	CONNECTOR	RA-H141SD
	JA401	PIN JACK	PKB-008

◉ POWB (DWR1103)

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC301	REGULATOR IC	NJM78L05FA
	IC302	REGULATOR IC	NJM7812FA
	IC303	REGULATOR IC	NJM79M12FA
	IC304	REGULATOR IC	NJM78M09FA
	IC305	REGULATOR IC	NJM79M09FA
	Q301	TRANSISTOR	DTC124ES
	Q302	TRANSISTOR	2SA1283
⚠	D301	DIODE	S2VB10F
	D302, 303	RECTIFIER DIODE	1SR139-400
⚠	D304	DIODE	S2VB10F
	D305	RECTIFIER DIODE	1SR139-400
⚠	D306, 307	DIODE	S10VB10-DF9
	D308-312	LED	SEL2215S
	D313	DIODE	10DF1
RELAY			
⚠	RY301	RELAY	DSR1006
CAPACITORS			
⚠	C301	CERAMIC CAPACITOR	CKCYF103Z50
	C302	ELECTR. CAPACITOR (6800μ/25V)	RCH1032
	C303	ELECTR. CAPACITOR	CEAS4R7M50
	C304	ELECTR. CAPACITOR	CEAS470M25
	C305	ELECTR. CAPACITOR	CEAS010M50
⚠	C306	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
	C307, 308	ELECTROLYTIC CAPACIT	CEAS102M35
	C309, 310	ELECTR. CAPACITOR	CEAS010M50
	C311	CERAMIC CAPACITOR	CKCYF103Z50
⚠	C312	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
	C313, 314	ELECTROLYTIC CAPACIT (10000μ/30V)	DCH1034
⚠	C315	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
	C316, 317	CAPACITOR (ALUMINUM) (8200μ/50V)	DCH-104
	C318, 319	ELECTR. CAPACITOR	CEAS470M25
	C320, 321	ELECTR. CAPACITOR	CEAS010M50
RESISTORS			
⚠	R301	METAL OXIDE RESISTOR	RS3LMF3R3J
⚠	R304	CARBON FILM RESISTOR	RD1/2LF47J
⚠	R307	FUSE RESISTOR (10Ω)	DCN1002
⚠	R310, 311	METAL OXIDE RESISTOR	RS1LMF103J
⚠	R314, 315	CARBON FILM RESISTOR	RD1/2LF470J
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	CN8	CONNECTOR	RA-H161SD

◉ ACIN (DWR1108)

Mark	No.	Description	Part No.
COIL			
⚠	L751	FILTER	VTL-004
CAPACITORS			
⚠	C751-753	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
OTHERS			
⚠	CN36	CONNECTOR	SD-5277-02A

◉ MTRP (DWR1109)

Mark	No.	Description	Part No.
OTHERS			
	CONNECTOR ASS'Y 3P		DKP2247

◉ MTRS (DWR1110)

Mark	No.	Description	Part No.
OTHERS			
	CONNECTOR ASS'Y 5P		DKP2250
	CONNECTOR ASS'Y		DKP2251
	CONNECTOR ASS'Y		DKP2252

◉ STRP (DWR1111)

Mark	No.	Description	Part No.
OTHERS			
	CONNECTOR ASS'Y 3P		DKP2246

Mark	No.	Description	Part No.
◉ STRS (DWR1112)			
OTHERS			
		CONNECTOR ASS'Y 5P	DKP2248
		CONNECTOR ASS'Y 3P	DKP2249
◉ KEYB (DWS1101)			
SEMICONDUCTORS			
	D301-310	LED	SLV-31MC3
	D311-314	LED	SLV-31DC3
	D315-322	LED	SLV-31YC3
SWITCHES			
	S301-310	TACT SWITCH(1-10)	DSG1011
	S311-316	TACT SWITCH (CLEAR, BEST MITS, ROTATION MENU)	RSG-155
RESISTORS			
		ALL RESISTORS	RD1/6PM□□□J
◉ OPER (DWS1156)			
SWITCHES			
	S301-303	LIGHT ACTION SWITCH (TOC INITIALIZE, ROTATE MENU, SERVICE MODE)	DSG-107
◉ PSWB (DWS1163)			
SWITCHES			
⚠	S	POWER SWITCH(POWER)	DSA1005
CAPACITOR			
⚠	C201	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
◉ ROTA (DWX1109)			
SEMICONDUCTORS			
	Q401	DIGITAL TRANSISTOR	UN4112
	Q402	TRANSISTOR	2SD1762-F8
	Q403	DIGITAL TRANSISTOR	UN4212
	Q404	TRANSISTOR	2SB1185-F8
	D401,402	DIODE	1SR139-400
CAPACITORS			
	C401	ELECTR. CAPACITOR	CEAL470M6R3
	C402	CERAMIC CAPACITOR	CKPUYF223Z25
	C403	ELECTROLYTIC CAPACIT	CEAS101M25
RESISTORS			
		ALL RESISTORS	RD1/6PM□□□J

Mark	No.	Description	Part No.
◉ POSS (DWX1110)			
SEMICONDUCTOR			
	D501		GP1A14
CAPACITOR			
	C501	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTOR			
	R501	CARBON FILM RESISTOR	RD1/6PM391J
◉ LAMP (DWX1111)			
CAPACITORS			
⚠	C601,602	CAPACITOR (CERAMIC) (0.01μ)	RCG-009
OTHERS			
⚠	CN33		SD-5277-02A
◉ SENS (DWX1112)			
SEMICONDUCTOR			
	D701	LED(RED)	SLR-54VR35H
CAPACITOR			
	C701	CERAMIC CAPACITOR	CKPUYF223Z25
OTHERS			
		REMOTE SENSOR	GP1050X
◉ CNTB (DWX1132)			
SEMICONDUCTOR			
	IC801		GP1A90R
CAPACITOR			
	C801	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTOR			
	R801	CARBON FILM RESISTOR	RD1/6PM121J
◉ CRJB (DWX1168)			
CAPACITORS			
	C501	CAPACITOR ARRAY (1000p×8)	DCG-105
	C502	CERAMIC CAPACITOR	CKCYF102Z50
	C503	CERAMIC CAPACITOR	CKCYF103Z50
OTHERS			
	SOCKET		VKN1072

Mark	No.	Description	Part No.
◉ RSSB (DWX1243)			
SWITCH			
	S201	8P DIP SWITCH(FUNCTION)	DSX1011
CAPACITORS			
	C203, 204	CERAMIC CAPACITOR	CKCYF103Z50
	C205-209	CERAMIC CAPACITOR	CKCYF102Z50
OTHERS			
	JA201	D-SUB SOCKET 9P	DKN1051
◉ BRAN (DWX1245)			
SEMICONDUCTOR			
	IC992	LOGIC IC	NJU4052BD
CAPACITORS			
	C992, 993	CERAMIC CAPACITOR	CKPUYF103Z25
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
OTHERS			
	CN19	CONNECTOR	RA-H141SD
	CN2	CONNECTOR	RA-H401SD
	CN4	CONNECTOR	RA-H161SD
	CN8	CONNECTOR	RA-H602SD
◉ NETWORK ASSEMBLY (SWN1272)			
COILS			
	L1	CHOKE COIL (3.3MH)	STH1110
	L3	CHOKE COIL (3.9MH)	STH1021
	L4	CHOKE COIL (0.22MH)	STH-327
CAPACITORS			
	C1	CAPACITOR (22)	CES422G0KJ
	C2	CAPACITOR (10)	CES4100KJ
	C4	CAPACITOR (1.8)	CES4DX1R8KJ
RESISTOR			
	R4	RESISTOR (10Ω)	RT1GBAL100K
OTHERS			
	Br1	CIRCUIT PROTECTOR (1A)	SSG-004

6.2 CD SECTION

Mark	No.	Description	Part No.
EKEY			
SWITCHES			
	S801-803	TACT SWITCH (EJECT(A, B, C))	DSG1009
DEGT(DWX1116)			
SEMICONDUCTORS			
	IC1	PRE AMP IC	CXA1081S
	IC10	POWER OP AMP	TA7256P
	IC11	SYSTEM PRESET IC	M51953BL
	IC2	SERVO CONTROL IC	CXA1082AS
	IC3	EFM DEMODULATION IC	CXD1135QZ
	IC4	MEMORY IC	CXK5816PN-12L
	IC5	MCU	PD0068B
	IC6-8	POWER OP AMP	TA7256P
	Q1	TRANSISTOR	DTA124ES
	Q10	TRANSISTOR	DTC124ES
	Q11	TRANSISTOR	2SC1740S
	Q12	TRANSISTOR	DTA124ES
	Q13	TRANSISTOR	2SA933S
	Q14	TRANSISTOR	DTA124ES
	Q15	TRANSISTOR	2SC2497
	Q16	TRANSISTOR	DTC124ES
	Q2	TRANSISTOR	2SC2497
	Q3	TRANSISTOR	DTA124ES
	Q4	TRANSISTOR	2SC2497
	Q5	TRANSISTOR	DTA124ES
	Q6	TRANSISTOR	2SC2497
	Q7, 8	TRANSISTOR	2SC1740S
	Q9	TRANSISTOR	2SA1399
	D4-7	DIODE	1SS254
CAPACITORS			
	C1	ELECTR. CAPACITOR	CEASR47M50
	C10, 11	CERAMIC CAPACITOR	CCCCH300J50
	C12, 13	ELECTR. CAPACITOR	CEAS330M16
	C14	CERAMIC CAPACITOR	CKCYF103Z50
	C15, 16	CERAMIC CAPACITOR	CCCCH220J50
	C17	ELECTR. CAPACITOR	CEAS330M16
	C18, 19	CERAMIC CAPACITOR	CKCYB102K50
	C2	MYLOR FILM CAPACITOR	CQMA333J50
	C20	CERAMIC CAPACITOR	CKCYB102K50
	C21, 22	ELECTR. CAPACITOR	CEAS330M16
	C23	ELECTR. CAPACITOR	CEAS010M50
	C24	CERAMIC CAPACITOR	CKCYB102K50
	C25	CERAMIC CAPACITOR	CKCYF102Z50
	C26-29	ELECTR. CAPACITOR	CEAS330M16
	C3	MYLOR FILM CAPACITOR	CQMA102J50
	C30, 31	ELECTR. CAPACITOR	CEAS330M16
	C32	ELECTR. CAPACITOR	CEAS101M10
	C33	CERAMIC CAPACITOR	CCCCH390J50
	C34	MYLOR FILM CAPACITOR	CQMA472J50
	C35	CERAMIC CAPACITOR	CCCCH300J50
	C36, 37	ELECTR. CAPACITOR	CEAS330M16
	C38	CERAMIC CAPACITOR	CCCCH300J50
	C39	MYLOR FILM CAPACITOR	CQMA333J50
	C40	ELECTR. CAPACITOR	CEAS330M16
	C41	MYLOR FILM CAPACITOR	CQMA332J50
	C42	MYLOR FILM CAPACITOR	CQMA103J50
	C43	ELECTR. CAPACITOR	CEASR47M50
	C44	MYLOR FILM CAPACITOR	CQMA103J50
	C45	ELECTR. CAPACITOR	CEAS330M16
	C46	MYLOR FILM CAPACITOR	CQMA272J50
	C47, 48	ELECTR. CAPACITOR	CEAS330M16
	C49	MYLOR FILM CAPACITOR	CQMA333J50
	C50	ELECTR. CAPACITOR	CEAS330M16
	C51	MYLOR FILM CAPACITOR	CQMA472J50
	C52, 53	MYLOR FILM CAPACITOR	CQMA104J50
	C54	MYLOR FILM CAPACITOR	CQMA102J50
	C55	ELECTR. CAPACITOR	CEAS4R7M50
	C56	MYLOR FILM CAPACITOR	CQMA104J50
	C57	ELECTR. CAPACITOR	CEAS330M16
	C58	MYLOR FILM CAPACITOR	CQMA333J50
	C59	MYLOR FILM CAPACITOR	CQMA104J50
	C60	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C61, 62	ELECTR. CAPACITOR	CEAS330M16
	C63	MYLOR FILM CAPACITOR	CQMA103J50
	C64	ELECTR. CAPACITOR	CEAS330M16
	C65	ELECTR. CAPACITOR	CEAS101M10
	C66	MYLOR FILM CAPACITOR	CQMA472J50
	C67	ELECTR. CAPACITOR	CEAS3R3M50
	C68, 69	ELECTR. CAPACITOR	CEAS330M16
	C70-75	CERAMIC CAPACITOR	CCCCH221J50
	C76-78	ELECTR. CAPACITOR	CEANP010M50
	C79, 80	ELECTR. CAPACITOR	CEAS330M16
	C81	CERAMIC CAPACITOR	CKDYP103Z50
RESISTORS			
	VR2	SEMI-FIXED RESISTOR (10kΩ)	VRTB6VS103
	VR3-7	VR (22kΩ)	VRTB6VS223
	VR8	VR (1kΩ)	VRTB6VS102
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	DL1, 2	DELAY LINE	PTF1012
	X1	CRYSTAL RESONATOR	DSS1010
	X2	CRYSTAL RESONATOR	PSS-012
	CN10		B12B-PH-K-S
	CN4		B6P-SHF-1AA
	CN7		559T-17APB
	CN8		B6P-SHF-1AA
	IC SOCKET		VKH-029

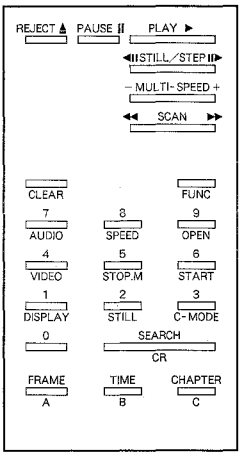
Mark	No.	Description	Part No.
DJAK			
CAPACITOR			
	C591	CAPACITOR ARRAY	DCG1007
OTHERS			
	JA501	SOCKET	VKN1072
PJAK			
OTHERS			
	JA601	JACK	PKB1009
MJSW			
SWITCHES			
	S801-803 (MJ LOCK(1, 2, 3))	PUSH SWITCH	PSH1008
	S804-806 (MJ SENS(1, 2, 3))	SLIDE SWITCH	PSH1005
SENS			
SEMICONDUCTOR			
	Q801		GP1A52HR
SWITCH			
	S801	MICRO SWITCH (UP LIMIT)	RSF1007
CAPACITOR			
	C901	ELECTROLYTIC CAPACIT	CEJA100M16
RESISTORS			
	R901, 902	CARBONFILM RESISTER	RD1/6PM□□□J
REJC			
There is not supplied parts in this unit.			
FREC			
OTHERS			
	CN401, 402	CONNECTOR	5597-17APB

Mark	No.	Description	Part No.
◉ ANLG(DWX1117)			
SEMICONDUCTORS			
	IC201	D/A CONVERTER	LC7881-C
	IC202, 203	LINEAR IC	NJM4558D
	IC204	REGULATOR IC	NJM79L05A
	IC205	REGULATOR IC	NJM7805FA
	Q201, 202	TRANSISTOR	DTC124ES
	Q203	TRANSISTOR	DTA124ES
	Q204	TRANSISTOR	DTC124ES
	Q205, 206	TRANSISTOR	2SD1302
	Q207, 208	TRANSISTOR	2SC1740S
	Q209	TRANSISTOR	DTA124ES
	D201	BRIDGE RECTIFIER	2W02-5008-L
COIL AND FILTERS			
	L201	FILTER	VTL-157
	F202-204		VTH1001
CAPACITORS			
	C201, 202	CAPACITOR (CERAMIC) (0.01 μ)	RCG-009
	C203	ELECTROLYTIC CAPACITOR	CEAS472M16
	C204	ELECTROLYTIC CAPACIT	CEAS222M16
	C205	ELECTR. CAPACITOR	CEAS102M10
	C206	ELECTR. CAPACITOR	CEAS471M10
	C207, 208	MYLOR FILM CAPACITOR	CQMA102J50
	C209, 210	ELECTR. CAPACITOR	CEAS220M50
	C211, 212	MYLOR FILM CAPACITOR	CQMA821J50
	C213, 214	MYLOR FILM CAPACITOR	CQMA471J50
	C215, 216	MYLOR FILM CAPACITOR	CQMA472J50
	C217, 218	MYLOR FILM CAPACITOR	CQMA683J50
	C219, 220	ELECTR. CAPACITOR	CEAS220M50
	C221-225	ELECTR. CAPACITOR	CEAS330M16
	C226	ELECTR. CAPACITOR	CEAS101M10
	C227	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
HRMB			
There is not supplied parts in this unit.			
RMJB			
OTHERS			
	MINI JACK 3P		DKN1028

7. SERVICE MODE

- As to using the service mode, refer to the operating instructions section (See page 23 - 43).
  And also as to the cord table of the service mode, refer to the operating instructions.
- Shows the function table of the remote control unit (RU - V101) for service as follows. When operating the CD changer section directly, it is able to operate as shown in the below by connect the wired - remote control to the CD changer.

7.1 FUNCTION TABLE OF THE REMOTE CONTROL UNIT FOR SERVICE



*1	REJECT		:Spinde stop
*1	PAUSE		:Pause
*1	PLAY		:Play
*2	STILL/STEP ⏸▶		:Disc select
*2	STILL/STEP ◀⏸		:Disc return
*2	MULTI - SPEED+		:Test command
*2	MULTI - SPEED –		:Test command
*1	SCAN ▶▶		:Scan fwd
*1	SCAN ◀◀		:Scan rev
*1	CLEAR		:Clear
*2	FRAME		:Frame set
*2	TIME		:Time set
*2	CHAPTER		:Track set
*1	SEARCH		:Search
*1	10key		:Numerical input
	DISPLAY	(FUNC+1)	:no entry
	STILL	(FUNC+2)	:no entry
	C-MODE	(FUNC+3)	:no entry
	VIDEO	(FUNC+4)	:no entry
*1	STOP.M	(FUNC+5)	:Stop marker
*1	START	(FUNC+6)	:Start
	AUDIO	(FUNC+7)	:no entry
	SPEED	(FUNC+8)	:no entry
*1	OPEN	(FUNC+9)	:Magazine eject

*1 ..... Normal function command
*2 ..... Function command is different from the LD - V530.
Not marked ..... No entry command

- **Test command**
  0 + MULTI - SPEED (+, –) keys :LD - ON
  1 + MULTI - SPEED (+, –) keys :FOCUS IN
  2 + MULTI - SPEED (+, –) keys :Spindle kick
  3 + MULTI - SPEED (+, –) keys :Tracking and slider servo ON
  4 + MULTI - SPEED (+, –) keys :Slider fwd (500ms) ┐
  5 + MULTI - SPEED (+, –) keys :Slider rev (500ms) ┘ Stop by MULTI - SPEED (+, –) key
  6 + MULTI - SPEED (+, –) keys :Tracking and slider servo OFF
  7 + MULTI - SPEED (+, –) keys :Slider stop and spindle stop
  8 + MULTI - SPEED (+, –) keys :Slider stop and spindle stop
  9 + MULTI - SPEED (+, –) keys :LD - OFF

8. ADJUSTMENTS

8.1 MECHANICAL ADJUSTMENTS

8.1.1 MAIN SECTION

● Synchronous adjustment of three surfaces of the menu (Fig. 8-1)

PREPARATIONS

- Adjust without installing the motor (menu).
- Fix the center pulley to the menu shaft with the screws.

(1) Apply synchro belt between synchro pulley and center pulley both on the right and left sides.
(2) While applying a spring (tension) to the underframe and tension plate, apply a tension to the synchro belt.
(3) Fix the tension plate to the underframe with screw ①.
(4) By placing a flat plate such as a ruler on them, align the three surfaces of the menu with each other on the same level.
(5) Fix the menu shaft to the synchro pulley using a hexagonal wrench.
(6) Remove the plate placed on the menu and check the following items while turning the menu by hand.
  1. Check that the three surfaces of the menu rotate smoothly.
  2. Check that all the three surfaces align with each other on the same level after turning the menu shaft once.

● Adjustment of the stop position of menu rotation

PREPARATIONS

- Loosen screw Ⓐ which holds the encoder disc using a hexagonal wrench.
- Loosen screw Ⓑ which holds the adjustment plate.
- Adjust with the motor (menu) attached.

(1) Set the gap between the encoder disc and photo interrupter of the motor(menu)to $1^{+0}_{-0.5}$ mm. (Fig. 8-2)
(2) Fix the screw of the encoder disc by tightening with a hex wrench.
(3) Turn screw Ⓒ so that the carved mark on the adjustment plate aligns with the underframe. Then temporarily tighten screw Ⓑ.
(4) Push the ROTATE MENU key on the front panel of the main unit so that menu rotates. Then, perform the following adjustments depending on the condition. (Fig. 8-3)
  - When the menu stops after extending the front
    ..... Loosen screw Ⓑ ,then tighten screw Ⓒ turning it clockwise.
  - When menu stops before reaching the front
    ..... Loosen screw Ⓑ and turn screw Ⓒ counterclockwise to loosen it.

(5) Turn the menu again and firmly tighten screw Ⓑ when the menu stops directing its surfaces to the front. (Fig. 8-4 Ⓐ)
(6) Finally, turn the menu and check that the menu stops directing all of its three surfaces to the front at every 120° rotation.

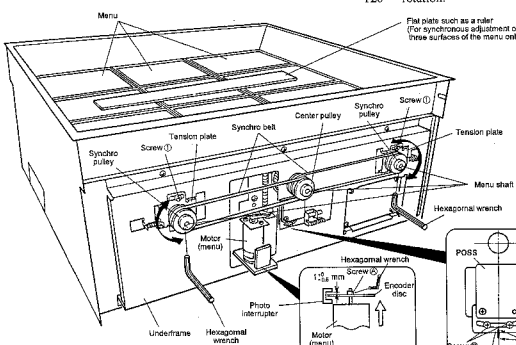


Fig. 8-1

Fig. 8-2

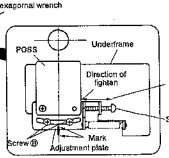


Fig. 8-3

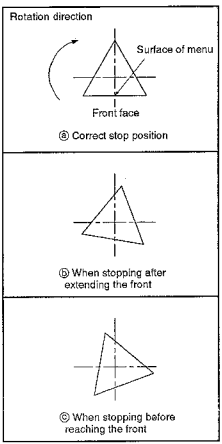

Rotation direction
Surface of menu
Front face
Ⓐ Correct stop position
Ⓑ When stopping after extending the front
Ⓒ When stopping before reaching the front

Fig. 8-4

8.1.2 CD SECTION

PREPARATIONS

- Set a magazine in the first and third modules of the CD main unit.
- Connect the remote control unit (RU-V101) to the CD main unit.

1. Rough adjustment of the select position

(1) Set the distance from the upper side of the sensor plate to that of the main chassis to 7mm by turning screw Ⓐ.

2. Adjustment of the select position

(1) First, proceed as follows.

① Press the 10keys in the sequence of 1 + 8 + STILL / STEP ⏭ (DISC SELECT) key + STILL / STEP ⏮ (DISC RETURN) key. When the operation is completed, check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3^{+0.2}_{-0}$mm.

② If the distance is not within the specified range, turn screw Ⓐ to adjust the position of the sensor plate and press the 10keys again in the sequence of 1 + 8 + STILL / STEP ⏭ (DISC SELECT) key + STILL / STEP ⏮ (DISC RETURN) key until the distance comes within the specified range.

③ Push the 10keys in the sequence of 6 + STILL / STEP ⏭ (DISC SELECT) key + STILL / STEP ⏮ (DISC RETURN) key and check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is 0.3mm ± 0.1mm.

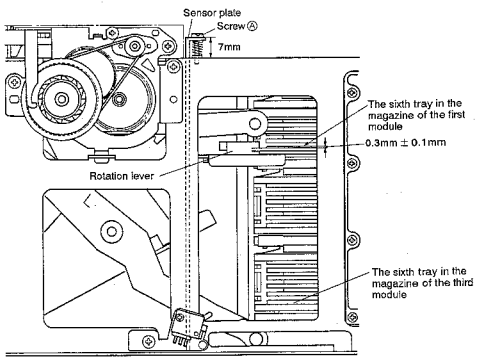
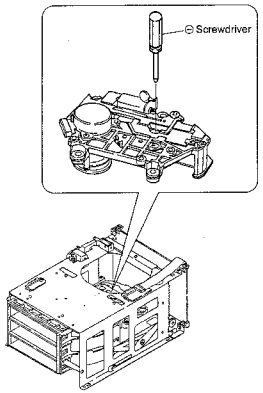
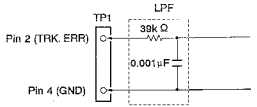

Sensor plate
Screw Ⓐ
7mm
The sixth tray in the magazine of the first module
0.3mm ± 0.1mm
Rotation lever
The sixth tray in the magazine of the third module

Fig. 8-5

Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check Items/Adjustment specifications	Adjustment procedure
5	**GRATING ADJUSTMENT**					
	 Fig. 8-7					● Set to Service mode. ● Shift the pickup close to the center of the disc by pressing [−MULTI-SPEED+] key + [4] so that the grating adjustment screw of the pickup can be seen through the oval hole of the upper side of the servo mechanism. ● Insert the ⊖ screwdriver into the adjusting hole from the upper side of the mechanism as shown in Fig. 8-7, and confirm that the grating screw turns. ● Press [−MULTI-SPEED+] key + [1] and [−MULTI-SPEED+] key + [2] sequentially and close the focus servo and spindle servo. (Do not close the tracking servo.) ● Observe the waveform of pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope. At this point, insert a 4kHz cutoff low-pass filter. (Fig. 8-8)  Fig. 8-8
	0.5V/div	5msec /div	TP1 Pin 2 (TRK. ERR)	Grating	Null point	● Turn the ⊖ screwdriver and find null point. (Photo. 8-1)
				Grating	Maximum amplitude	● Then, turn slowly the ⊖ screwdriver counterclockwise from the null point and adjust at the point where the waveform (Tracking error signal) firstly becomes maximum amplitude. (See Photo. 8-2.) *Note:* *If the ⊖ screwdriver is pressed strongly, the pickup moves toward disc center, accordingly adjustment becomes difficult.* ● Finally, be sure to confirm that the tracking error signal (at this time, 4kHz of cutoff low-pass filter is not inserted) when the pickup is moved toward the disc center and the P-P voltage of the tracking error signal at the outer circumference of the disc are not varied greatly. When the level is deviated over ±10%, adjust again by turning grating screw to the maximum error amplitude point.

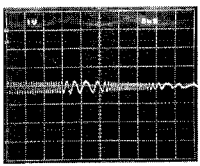


Photo. 8-1
Null point

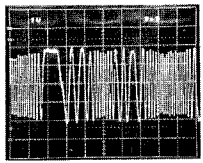


Photo. 8-2
Maximum amplitude

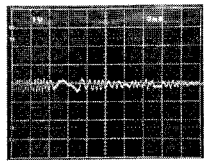
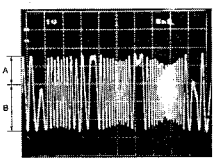


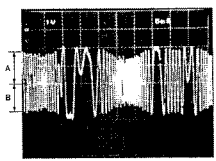
Photo. 8-3
This is not the null-point waveform

Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check items/Adjustment specifications	Adjustment procedure
6	**TRACKING BALANCE ADJUSTMENT**					
	0.5V/div	5msec /div	TP1 Pin 2 (TRK. ERR)	VR5 (TRK. BAL)	(TRK. ERR)	● Set the TEST disc. ● Set to Service mode. ● Shift the carriage close to the center of the disc by pressing [– MULTI-SPEED+] key + [4]. ● Press [– MULTI-SPEED+] key + [1] and [– MULTI-SPEED+] key + [2] to start turning the disc. ● Observe pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope and adjust with VR5 TRK. BAL (Tracking balance) volume so that the DC component of the tracking error disappears. *Note: Before proceeding with the above adjustments, be sure to adjust the tracking error offset.*



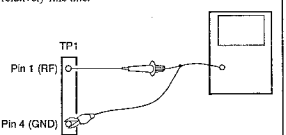
A ≠ B

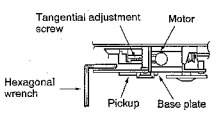
Photo. 8-4 DC elements mixed in signal



A=B

Photo. 8-5 DC elements eliminated

Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check items/Adjustment specifications	Adjustment procedure
7	**TANGENTIAL ADJUSTMENT**					
		200nsec /div	TP1 Pin 1 (RF output)	Tangential adjustment screw	Best eye pattern	• Set the TEST disc. • Set to Service mode. • Shift the pickup close to the center of the disc by pressing [– MULTI - SPEED+] key + [4]. • Pres [– MULTI - SPEED+] key + [1], [– MULTI - SPEED+] key + [2] and [– MULTI - SPEED+] key + [3] sequentially, and close all the servos. (Pause indicator lights up.) • Observe pin 1 RF (RF output) of TP1 with an oscilloscope and adjust with the tangential screw so that the eye pattern becomes clear. (Fig. 8 - 9 and 8 - 10) • The adjusting point is the middle point between the point where the eye pattern becomes deteriorate by turning the tangential screw clockwise and the point where the eye pattern becomes deteriorate by turning the tangential screw counterclockwise. As a criterion, observe that the overall waveform is clear and one of the diamond shapes within the eye pattern (Photo. 8 - 7), and adjust at as an optimum point where the diamond shape is seen relatively fine line.  Fig. 8 - 9 *Note: During the adjustment, hold hexagonal wrench to upward so as to keep the pickup body not goes down.*



In the figure below, the top and bottom is opposite to that of the actual product.

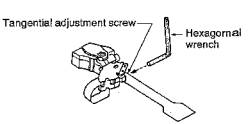


Fig. 8 - 10 Tangential adjustment

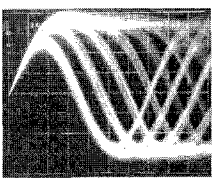


Photo. 8-6

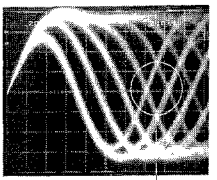


Photo. 8-7

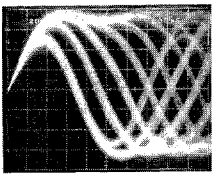
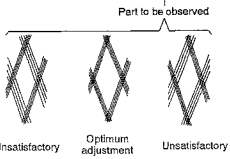


Photo. 8-8



Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check Items/Adjustment specifications	Adjustment procedure
8	**FOCUS GAIN ADJUSTMENT**					
	CH1 (X):20mV/div CH2 (Y):5mV/div. (Probe 10:1)		X axis: TP1 Pin 5 (FCS. IN) Y axis: TP1 Pin 6 (FCS. ERR)	VR3 (FCS. GAN)	Phase difference 90°	● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 8-11. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 1Vp-p. *Note: Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.* ● Adjust with VR3 FCS. GAN (Focus gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (Phase difference 90°).

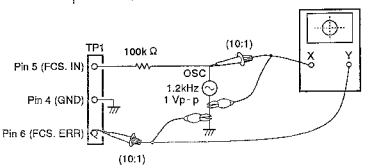


Fig. 8-11

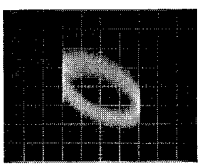


Photo. 8-9
Gain overcompensated

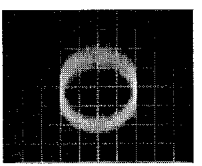


Photo. 8-10
Gain optimum

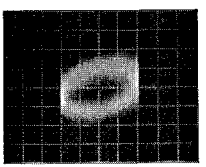


Photo. 8-11
Gain undercompensated

Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check Items/Adjustment specifications	Adjustment procedure
9	**TRACKING GAIN ADJUSTMENT**					
	CH1 (X):50mV/div CH2 (Y):5mV/div. (Probe 10:1)	X axis: TP1 Pin 3 (TRK. IN) Y axis: TP1 Pin 2 (TRK. ERR)	VR4 (TRK. GAN)	Phase difference 90°		● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 8-12. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 2Vp-p. *Note: Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.* ● Adjust with VR4 TRK. GAN (Tracking gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (phase difference 90°).

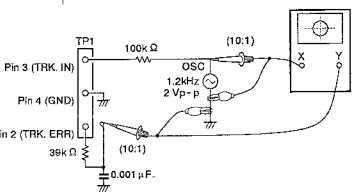


Fig. 8 - 12

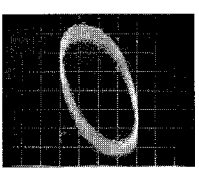


Photo. 8 - 12
Gain overcompensated

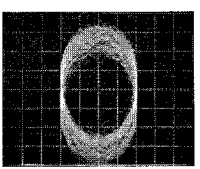


Photo. 8 - 13
Gain optimum

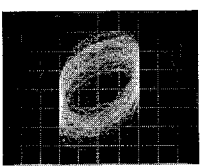


Photo. 8 - 14
Gain undercompensated

Step No.	Oscilloscope Setting V	Oscilloscope Setting H	Test Points	Adjusting Points	Check Items/Adjustment specifications	Adjustment procedure
10	**VCO FREE RUN FREQUENCY ADJUSTMENT**					
			TP2 Pin 8 (PLCK)	VR8 (VCO. ADJ)	4.275 ± 0.01MHz	● Set to Service mode. ● Short - circuit between pin 25 and pin 26 of IC1 in the DEGT assembly with ⊖ screwdriver, etc. (Fig. 8-6) ● Connect frequency counter, which is measurable over 10MHz, to pin 8 of TP2 (PLCK). ● Adjust with VR8 VCO. ADJ (VCO adjustment) volume so that the value of frequency counter becomes 4.275 ± 0.01MHz.
11	**METHOD TO CONFIRM S CHARACTER(FOCUS ERROR)**					
			TP1 Pin 6 (FCS. ERR)			● Set to Service mode. ● Short - circuit between pin 5 FCS. IN (Focus in) of TP1 and GND. ● Press [– MULTI - SPEED +] key + [1] and observe the waveform of pin 6 FCS. ERR (Focus error) of TP1 at that time with an oscilloscope.

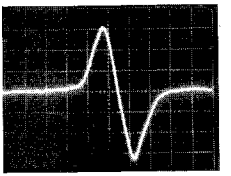


Photo. 8 - 15 Focus error

9. HOW TO DIAGNOISIS THE TROUBLE

9.1 PROCEDURES FOR DIAGNOSIS

1. Remove the menu board assembly, and open the grill. (Refer to 2. DISASSEMBLY)
2. Insert a screwdriver into the door - detection switch to turn it on, or short - circuit pins 1 and 3 of CN83 on BRAN. (Fig. 9 - 1)
   Under these conditions, the LED for CONT of the commander can be checked, and the operation using the connector for BRAN can also be checked.
3. Pull out the AMP (Refer to 2. DISASSEMBLY) to check the LED for AMP.

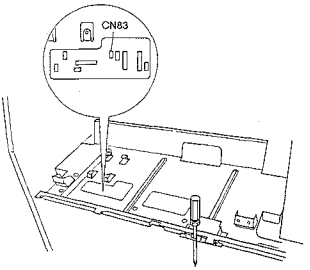


Fig. 9 - 1

9.2 MATERIALS AND BLOCK DIAGRAMS REQUIRED FOR CHECKING EACH BLOCK

(1)List of power sources

P. C. Boards Name	Power sources
SSLC	+11V (Audio, mute), ± 9V (Audio)
TCMX	± 9V (Audio)
EXTB	± 9V (Audio), +12V (Satellite remote control)
CONT	+12V (RS-232C, Buzzer, Coin, Counter, Satellite remote control) -12V (RS-232C) +5V (Microcomputer, Logic IC)
DISP	+12V (LED)
MESS	+12V (LED)
PAMP	± 50V (AMP section 100W) ± 30V (AMP section 30W) ± 18V (Protection circuit) +11V (Protection circuit)
ILLM	+12V (Illumination) +5V (Illumination)

(2)Arrangement drawing of the power block

ⓐ : FU752 (for Sub transformer)
ⓑ : FU751 (for Main transformer)
ⓒ : FU301 (+5V)
ⓓ : FU302 (AC27V)
ⓔ : FU304 (± 12V, ± 9V)
ⓕ : FU303 (± 12V, ± 9V)
ⓖ : FU501 (+5V, +12V: for Illumination)
ⓗ : R304 (+5V)
ⓘ : R301 (+14V)
ⓙ : R314 (+9V)
ⓚ : R315 (− 9V)
ⓛ : D307 (± 30V: 30W AMP)
ⓜ : D301 (+5V, +11V)
ⓝ : D304 (± 12V, ± 9V)
ⓞ : D306 (± 50V: 100W AMP)
ⓟ : D525 (+5V,+12V: for Illumination)

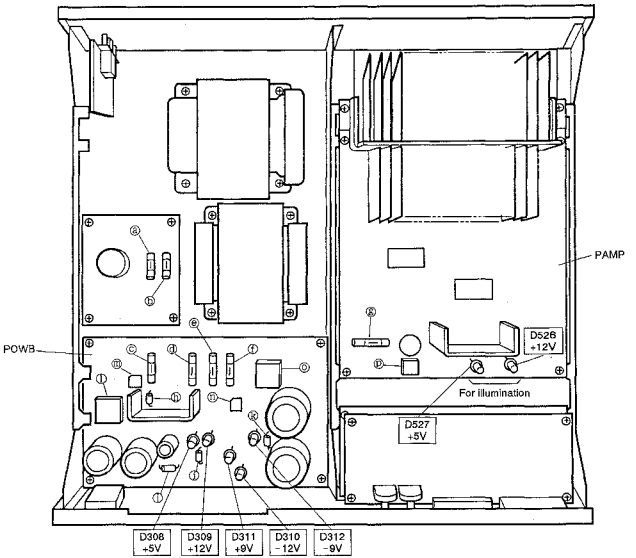


Fig. 9-2

(3) BLOCK DIAGRAM

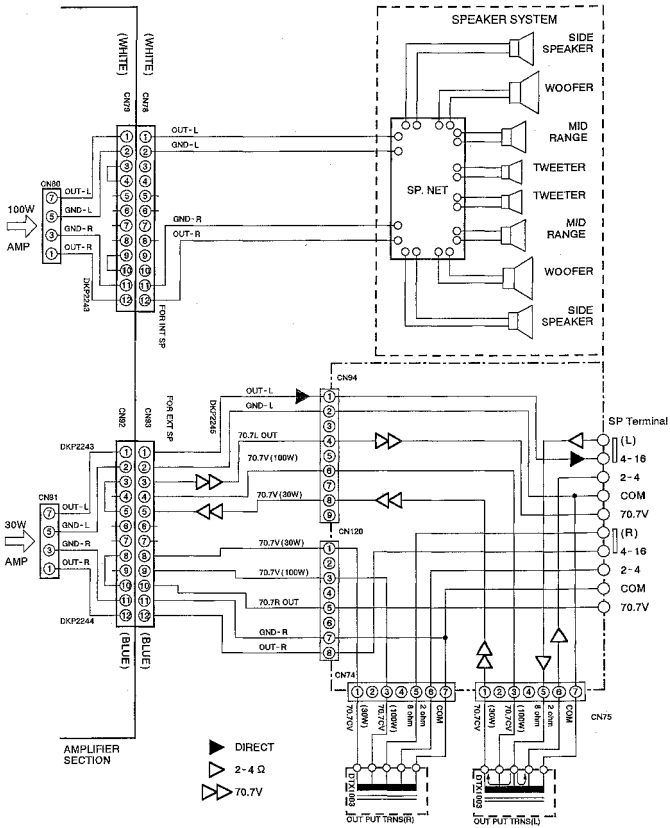


Fig. 9-3 When connecting the amplifier output 100W to the internal speakers and 30W to the external speakers.

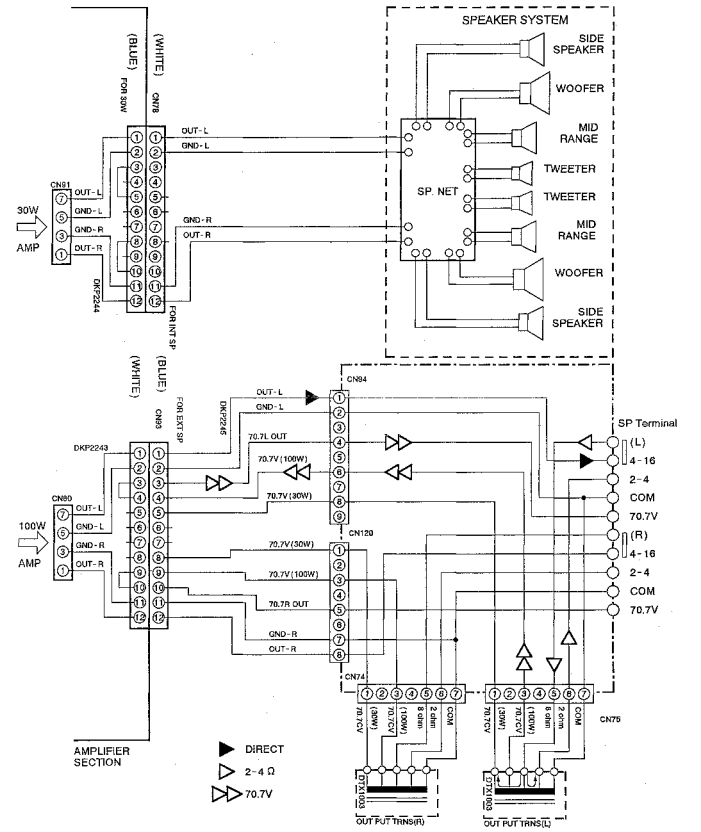


Fig. 9-4 When connecting the amplifier output 30W to the internal speakers and 100W to the external speakers.

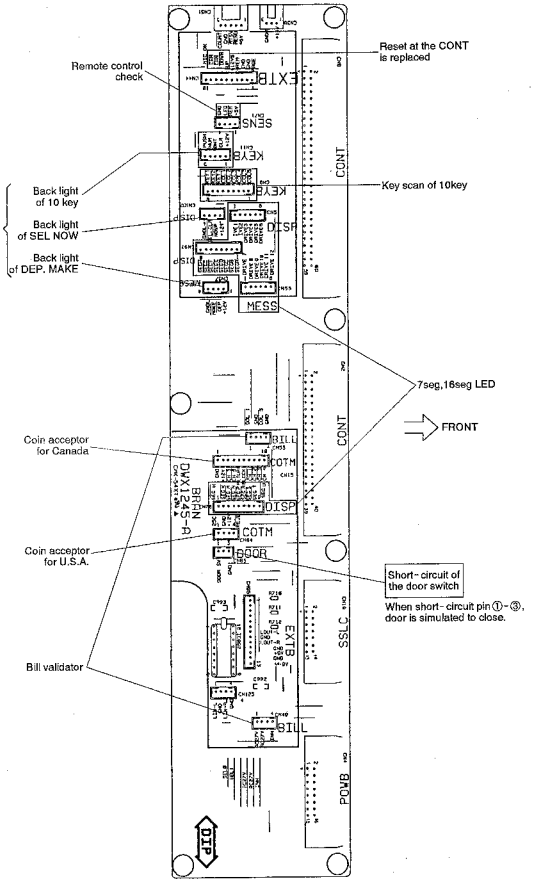


Fig. 9-5 Connector allocation of the BRAN board

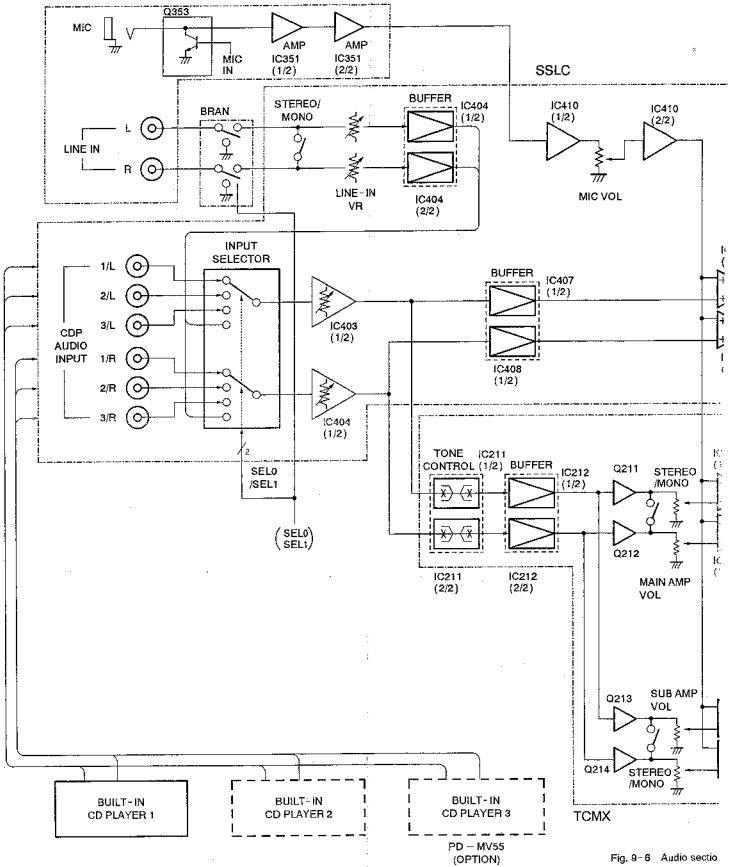


Fig. 9-6 Audio sectio

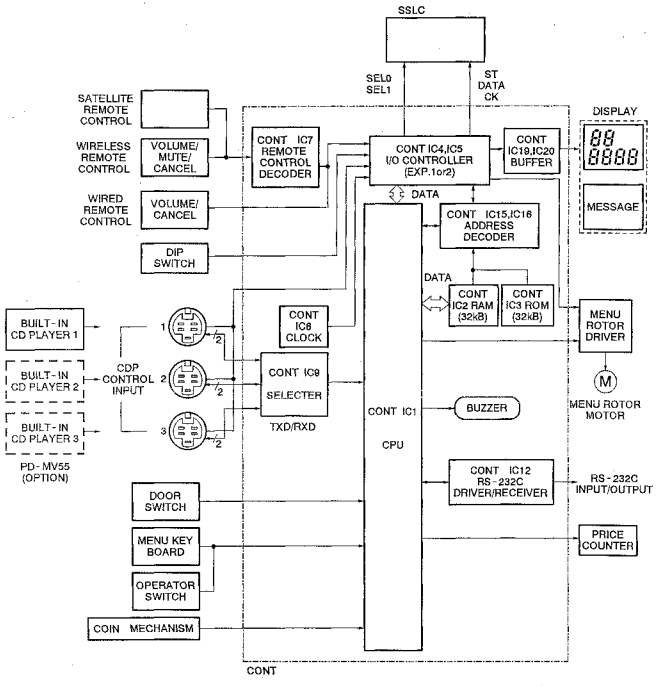


Fig.9-7 Control section block diagram

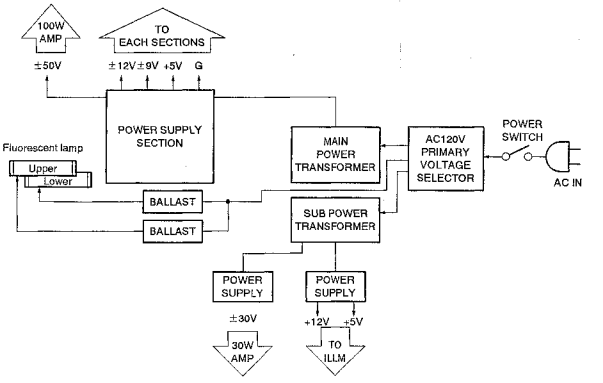


Fig.9-8 Power supply block daigram

9.3 DISPLA

•The following c

(1)Title display

LED Display	
ERR0	ROM abn
ERR1	RAM abn
ERR2	Player ab
DISC	A disc is r
	A control

Note : When CC system. (

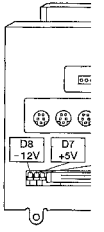
(2)Checking wi
Refer to oper

(3)Voltage LED
Indicates wh
CONT·····

PAMP·····

POWB·····

(4) LED showin
The LED bli
communicat



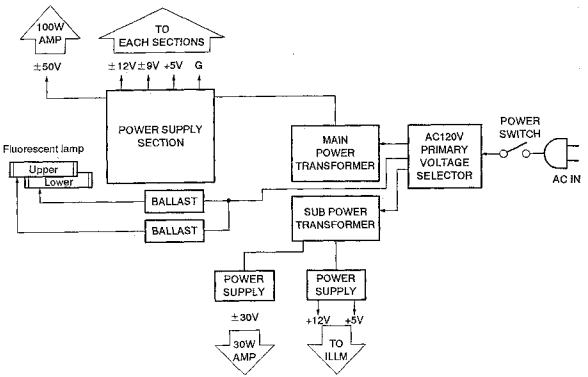


Fig.9-8 Power supply block daigram

9.3 DISPLAYS FOR DIAGNOSIS

•The following displays appear to check malfunctions.

(1)Title displaying LED

LED Display	Causes
ERR0	ROM abnormality ➡ Replace the CONT. (Note)
ERR1	RAM abnormality ➡ Check the voltage of BACKUP battery. (If enough capacity does not remains)
ERR2	Player abnormality ➡ Player change
DISC	A disc is not inserted. A control cord is disconnected.

Note : When CONT unit is replaced, be sure to reset the system. (See page 227.)

(2)Checking with an error history

Refer to operating instructions section. (See page 44.)

(3)Voltage LED

Indicates whether the power voltage is normal or not.

CONT·····D9 : + 12V, D8 : - 12V, D7 : + 5V
(Refer to Fig. 9-9)

PAMP·····D526 : + 12V, D527 : + 5V
(Refer to Fig. 9-2)

POWB·····D309 : + 12V, D310 : - 12V, D311 : + 9V, D312 : - 9V, D308 : + 5V
(Refer to Fig. 9-2)

(4) LED showing communication with CONT

The LED blinks while CONT and the CD player are in communication.(D10 : RX, D11 : TX)

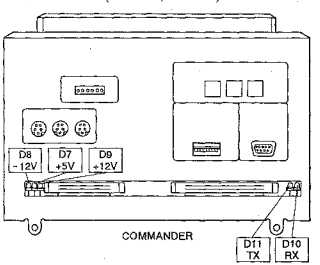


Fig. 9-9

9.4 NORMAL INITIAL OPERATION

1. When the power switch is turned on, a fluorescent light and illumination light.
2. The CD player reads TOC. (This operation is done when the power is turned on for the first time or when initialization of TOC is executed.)
   On the four-digit LED display on the top door assembly, the messages" ONE MOMENT PLEASE "appears.
3. " DEPOSITE CASH "on the top door assembly lights.
4. When a coin is put in, figures are displayed on the two-digit LED display for CREDIT.
5. Select a piece of music using the numeric keys, and "SELECTION" lights and a peeping sound is heard. On the four-digit LED display, "THANK YOU" appears.
   Then "SELECTION" changes to "PLAYING," and the player searches for the selected music.
6. The CD player plays the selected music.
   On the four-digit LED display, the number of the selected piece lights.

Fig. 9-10

9.5 PROCEDURES FOR DIAGNOSIS UNDER ABNORMAL CONDITIONS

When the initial operation described in section "9.4 NOMAL INTIAL OPERATION" is not executed normally, perform the following diagnostic procedures.

1. When the power is turned on, the fluorescent light and illumination do not light.——YES → Go to 9.5.1
   ↓ NO (P223)
2. The CD player does not work.——YES → Go to 9.5.2
   ↓ NO (P224)
3. A coin cannot be detected.——YES → Go to 9.5.3
   ↓ NO (P224)
4. The numeric keys do not light.——YES → Go to 9.5.4
   ↓ NO (P224)
5. Input with the numeric keys cannot be accepted.
   YES → Go to 9.5.5
   ↓ NO (P224)
6. A disc is being played but theres is no sound.
   YES → Go to 9.5.6
   ↓ NO (P225)
7. The sound volume cannot be controlled with the remote control unit.——YES → Go to 9.5.7
   ↓ NO (P225)
8. The RS-232C does not function.——YES → Go to 9.5.8
   ↓ NO (P226)
9. Misc.——→ Go to 9.5.9
   (1)The menu does not rotate normally. (P226)
   (2)The character display is abnormal.
   (3)Some part of the illumination is abnormal.
10. Notes——→ Go to 9.5.10
    (1)When the CONT is being replaced. (P227)

9.5.1 WHEN THE FLUORESCENT LAMP OR ILLUMINATION DOES NOT LIGHT

a) When the fluorescent lamp is not lit
- Check that the socket of the fluorescent lamp and connector on LAMP are firmly connected.
- Check that the glow lamp is not out.
- Check that the fuse (FU601 of LAMP) is not out.

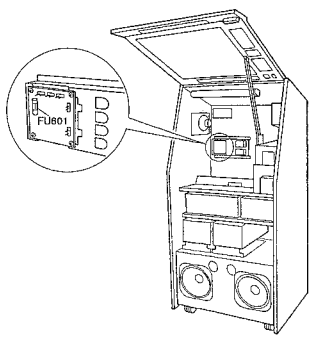


Fig. 9-11

b) When the illumination is not lit
(If a part of the illumination is not lit 9.5.9)
(See page 226.)
- Check that the connector of ILLM is firmly connected.
- Check that the LEDs (+12V, +5V) of PAMP are lit.
(See page 214.)
(The power source for the illumination is made on PAMP but not on POWB.)
- Check that the fuse of PAMP is not out.
(See page 214)

9.5.2 WHEN THE CD PLAYER DOES NOT WORK

a) If the CD player has not trouble but does not work

- Check that the AC power cord of the CD player is connected to an AC outlet.
- Check that "DISC" appears on the four - digit LED display on top door assembly because it appears when the control cord between the CD player and the commander is disconnected.
- CONT is defective and the control signal is not output to the CD player.

b) When the CD player is defective.

- Connect the wired remote control unit for servicing (RU-V101) to the CD player, and check the operation.

9.5.3 WHEN A COIN IS NOT DETECTED

a) Check the power for the connector on BRAN

- Bill validator

CN49 - 1 (AC27V) : Check that the specified voltage is applied.
- 2 (AC27V) : Check that the specified voltage is applied.
- 4 (INH) : Check that the phase is the same as that at pin 1.

- Coin acceptor (for the U.S.A.)

CN84 - 3 (+12V) : Check that the specified voltage is applied.

- Coin acceptor (for the Canada)

CN113 - 2 (+12V) : Check that the specified voltage is applied.

b) Check that the billvalidator is installed correctly.

- If the lock is released, reading will not be done.

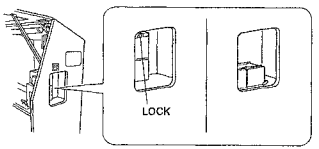


Fig. 9-12

c) Other checkes

- Check to see if inserted bills exceed 600.
- Check that the player is not set to free-play mode.
- Check that the bill is inserted with the correct side up.
- Check whether the bills inserted were other than $1 or $5.

9.5.4 WHEN THE NUMERIC KEYS DO NOT LIGHT UP

a) Check whether the unit is set to the condition under which selecting a piece of music is disabled.

Example: Check that discs are installed or that the communication line with the CD player is not disconnected.

b) Check that +12 V is applied to KEYB with which the numeric keys light up or that NUM is not set to LOW.

- Check this item at pin 1 of CN11 (+12V) and pin 4 (NUM) of CN11 on BRAN.

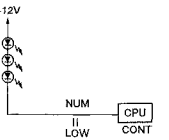


Fig. 9-13

- If no signal is output from pins 1 and 4 of CN11, check the connection between CONT and CONT - CN11.

9.5.5 WHEN INPUT WITH THE NUMERIC KEYS IS NOT ACCEPTED

a) Check that the tact (contact) switch which accepts the input of the numeric keys is not broken.

- Check it at CN9 on BRAN.

b) Check that the signal line for key input is not cut.Check it at CN9 on BRAN.

- Check it at CN9 on BRAN.

c) Misc.

- Check whether a place where no disk is set in the CD player was selected. (A peeping sound is heard.)
- Check that the communication line with the CD player is not cut. (Pip sound is heard if it is cut.)
- Check that the selected piece is not inhibited.
- Check whether the selected piece is inhibited because of track jump.

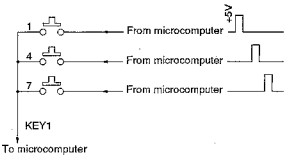


Fig. 9-14

• The numeric keys are scanned with the matrix as shown above.

9.5.6 WHEN A DISC IS PLAYED BUT NO SOUND IS HEARD

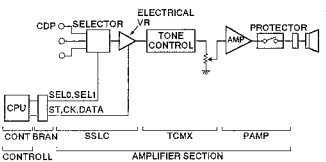


Fig. 9-15 Summary block diagram

a) Check that the operating method is correct.
• Check that the master volume control is not set to MINIMUM.
• Check that the electric volume control of the wireless or wired remote control unit is not set to MINIMUM.
(Check that the dB indication by the four-digit LED display.)
• Check that the player is not set to standby mode with the input of cancel / standby from the wireless remote control unit.
• Check that the sound volume was not reduced by pressing the once- more switch on the microphone.
• Check that the control cord and audio cord are connected correctly to the CD player, control unit and AMP.
b) Check that the signal is output from CONT.
• Check that the SEL0 and SEL1 signals are correctly output from CONT.
This can be checked at pin 9 (SEL0) and pin 10 (SEL1) of IC992 on BRAN.

	SEL0	SEL1
CDP1	L	L
CDP2	L	H
CDP3	H	L
BGM INPUT	H	H

These signals switch to CDP1, CDP2, CDP3 or BGM input.
• Check that the ST, CK and DATA signals are correctly output from CONT.
This can be checked at pins 3 (ST), 4 (CK) and 5 (DATA) of CN20 on SSLC in AMP.
These signals are output once when a remote control unit is operated or the power is turned on.

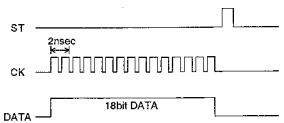


Fig. 9-16

c) Check that the protection relay on the AMP is operating.
• An external speaker is overloaded or short-circuited.
d) Check that the power amplifier IC in the AMP is not defective.
e) Check that power is supplied to each board.
f) Check whether the signal between boards is cut and that the cable for the control signal is connected.

9.5.7 WHEN THE SOUND VOLUME CANNOT BE CONTROLLED WITH A REMOTE CONTROL UNIT

a) When sound volume cannot be controlled with any of the remote control units
• If none of the wired, wireless or satellite remote control units can control the sound volume, the electric volume of CONT or SSLC is defective.
b) When only a wireless remote control unit cannot control the sound volume

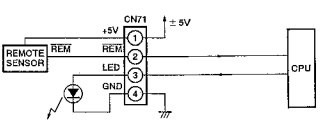


Fig. 9-17

• Check the signal at CN71 on BRAN.
If the LED of the remote control receptacle blinks when a wireless remote control unit is operated, it means that the CPU is receiving the control signals from the remote control unit.

c) When only a wired remote control unit cannot control the sound volume.
• Check that the remote control unit is not defective and the cord is not disconnected.
• Check that the connector of the remote control unit is not defective.

d) When only a satellite remote control unit cannot control the sound volume
• Noise of from fluorescent lamp etc. can affect remote control operation. Use the unit in another location.

9.5.8 WHEN THE RS-232C DOES NOT WORK

a) Check that the transmission baud rate is correct.
Note: The baud rate can be changed with the DIP switch on CONT. To activate the new setting, open the TOP DOOR ASS'Y then close it. Then the CPU reads the new setting.
b) Check that CONT is not defective.
c) Check that power of ±12V and +5V is supplied to CONT.

9.5.9 MISC.

(1) When abnormal operation is found on menu rotation
a) When the menu does not rotate

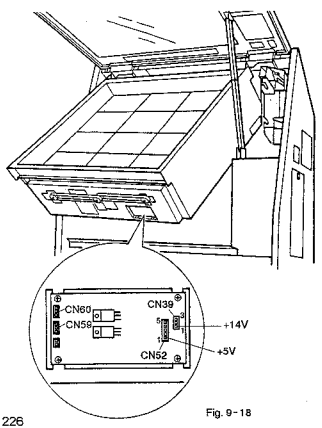
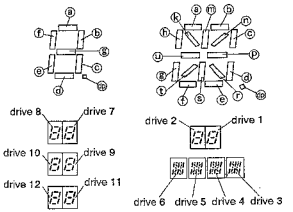


Fig. 9-18

• Turn the power on and off to check the menu rotation.
• Check that CN52 and CN39 on ROTA are connected.
• Check that pin 1 of CN52 and pin 1 of CN39 on ROTA outputs +5V and +14V respectively.

b) When the menu stops at an incorrect position
• Check that CN59 and CN85 are connected to ROTA or are not cut.

(2) When an abnormality is found with the character display
The 8 seg and 17 seg LEDs are used for displaying characters.
For the 8 seg LEDs, a, b, c, d, e, f, g and dp signals are used, and for the 17 seg LEDs, h, k, m, n, p, r, s, t and u signals are used in addition to those used with the 8 seg LEDs.



Exe.: When drive 1 is cut, all characters of 8 does not appear.
Exe.: When seg a is cut, the segment a of each character goes out.

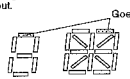


Fig. 9-19

As shown in the illustration above, one character is turned on and off with a drive signal, so when the drive signal is cut, the character does not appear.
seg a drives segment a of all characters shown in the illustration above. Therefore if the signal line for seg a is cut, segment a of each character goes out.
• To check the display, set the LED LIGHTING CHECK mode in service mode.
• Check CN97 (seg a to g and dp), CN76 (seg h, k, m, n, p, r to u), CN5 (drive 1 through 6) and CN55 (drive 7 through 12) on BRAN.

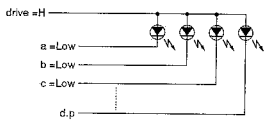


Fig. 9-20

An LED lights when a drive signal is "H" and a seg signal is "L".

(3)When some part of an illumination is abnormal

a)When a part of an illumination does not light

In the illumination block, supplied from PAMP where +5V and +12V are made from AC +18V sent from a subtransformer.

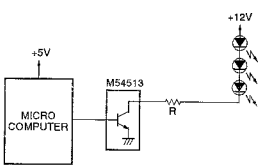


Fig. 9-21

As shown in the illustration above, two to four LEDs are connected in series in one line, so if one of them is defective, all of the LEDs in that line will go out.

- In such a case, turn the main unit off, and check which LED is defective by connecting two batteries in series.

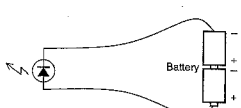


Fig. 9-22

9.5.10 NOTES

(1)When replacing CONT

- When CONT is replaced, be sure to reset the system following the procedure below.

1. Set all DIP switches to the upper position.
2. Set the POWER switch to ON while pressing the TOC initializing switch on the front panel of the commander. A beep will sound in a few seconds, indicating that resetting of the CONT CPU is completed.

Note: When the CPU is reset, data stored in the CPU are all deleted. Do not reset the CPU in normal operation.

■ PD4378A (IC811)

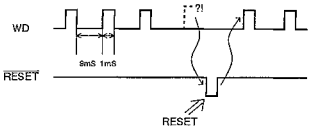
ILLUMINATION CONTROL MICROCOMPUTER

● Pin Functions

Pin No.	Pin Name	Function	Pin No.	Pin Name	Function
1	Port 1	GND	33	Port 3	'LASER JUKE' "K" Display
2			34		'LASER JUKE' "U" Display
3			35		'LASER JUKE' "J" Display
4			36		'LASER JUKE' "R" Display
5	Conparator input	GND	37	Port 4	'LASER JUKE' "E" Display
6			38		'LASER JUKE' "S" Display
7			39		'LASER JUKE' "A" Display
8			40		'LASER JUKE' "L" Display
9	Timer input	GND	41	Port 5	'☆' Mark 7
10			42		'☆' Mark 6
11	Port 2	'LASER JUKE' "E" Display	43		'☆' Mark 5
12		'☆' Mark 20	44		'☆' Mark 4
13		Shift clock output	45	Reset	Reset input
14		Other display (Serial data input) *2	46	Clock	Clock input
15	Port 0	GND	47	Port 6	'☆' Mark 3
16			48		'☆' Mark 2
17			49		'☆' Mark 1
18			50		Underline 9
19	Port 12	Underline 8	51	Port 7	'☆' Mark 15
20		Underline 7	52		'☆' Mark 14
21		Underline 6	53		'☆' Mark 13
22		Underline 5	54		'☆' Mark 12
23	Port 13	Underline 4	55	Port 8	'☆' Mark 11
24		Underline 3	56		'☆' Mark 10
25		Underline 2	57		'☆' Mark 9
26		Underline 1	58		'☆' Mark 8
27	Port 14	Watchdog *1	59	Port 9	'☆' Mark 19
28		Not used	60		'☆' Mark 18
29			61		'☆' Mark 17
30		Latch output	62		'☆' Mark 16
31	N.C.	Not used	63		
32	VDD	+5V	64	Vss	GND

*1: Watchdog (WD)

When the power is turned on, a signal having a cycle of 10 mseconds starts to function as WD. When any trouble occurs in the CPU or programs cannot be controlled, the reset IC activates a reset operation.

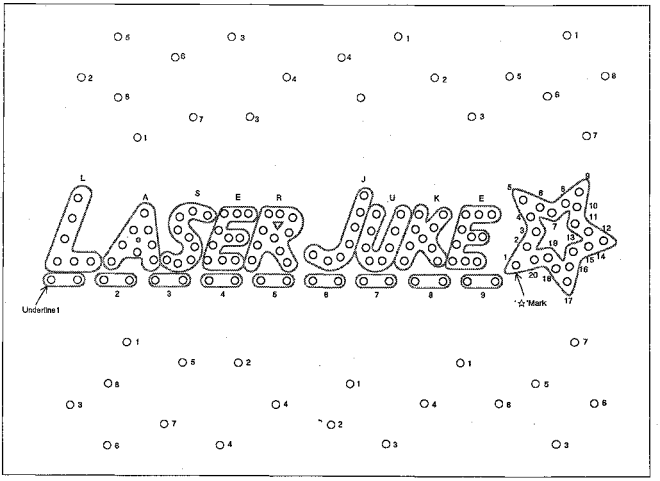


When reset, CPU resumes the normal condition and outputs WD again.

*2: Displays other than characters and graphics

For display other than characters and graphics, serial data are converted into parallel data, illuminating the LEDs. These serial data (8 - bit data) are output from pin 14 in synchronization with the shift clock which is supplied from pin 13, permitting the corresponding parallel data to be sent to the LEDs in synchronization with the latch output from pin 30.

The numbers shown in the figure are referred to the numbers of the ports which output the data converted into parallel.



11. FOR CJ - V77/KUC

NOTES:

- *Part without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ⊛ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CJ-V77/KUC and CJ-V99/KU have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		CJ-V99/KU	CJ-V77/KUC	
	Coin sheet (F)	• • • • •	DAH1615	
	Magazine spacer	• • • • •	DHC1019	
	Packing case	DHG1325	DHG1332	
	Label A	• • • • •	DRW1151	
	Player number label (1,2)	DRW1338	• • • • •	
	Coin acceptor	DXB-134	• • • • •	
	Bill validator unit	DXB1363	• • • • •	